PROPOSED

TWO STOREY COMMERCIAL WAREHOUSE AND OFFICE

BUILDING SITE

PART OF LOT 18

CONCESSION 1 (RIDEAU FRONT)

GEOGRAPHIC TOWNSHIP OF NEPEAN

96 BILL LEATHEM DRIVE

CITY OF OTTAWA

SERVICEABILITY REPORT

REPORT R-822-125A (REV. 1)

MARCH 2024

T.L. MAK ENGINEERING CONSULTANTS LTD.

SEPTEMBER 2023

REFERENCE FILE NUMBER 822-125

Introduction

The commercial land under consideration [Zone (IL9)] is proposed for a two-storey warehouse/office building development site. The municipal address of the property is 96 Bill Leathem Drive. It is situated on the south side of Bill Leathem Drive, west of Leikin Drive and east of Longfields Drive. It is located in the City Ward (Ward 24 – Barrhaven East). See site plan and legal survey plan in Appendix "A" for details.

The total gross floor area of warehouse/office building is approximately 1,644.40 m^2 (±17,700 ft^2) in size.

The size of the site development property under consideration is ±0.4047 ha. In addition to the two-storey warehouse/office building, the other development features will comprise of one vehicle entrance asphalt access road, parking areas, concrete walkways, landscape area, etc. to meet City of Ottawa site plan requirements.

A site geotechnical investigation report was prepared for the owner's soils engineers by Paterson Group entitled "Geotechincal Investigation – Proposed Warehouse Building" (Report No. PG6668-1) dated June 1, 2023.

This Serviceability Report will serve provide the City of Ottawa with our serviceability brief to address the proposed servicing scheme for this site.

Existing Site Conditions and Servicing

Presently, the said commercial property is vacant with gravel material stockpiled along the east portion of the site. The Land is currently found to be gently sloping and drains predominantly from a north to south (front to rear) direction across the lot. The existing ground surface of the lot across from the site is partially gravel covered with some vegetation cover at the west side of the property. The existing gradient of the land is sloping at an approximate gradient of 0.33%. For additional details of the site's pre-development conditions, refer to the coloured Google Images (2019) and aerial photography from (GeoOttawa 2022) in Appendix "B".

As for the availability of underground services, there are existing municipal services along Bill Leathem Drive consisting of the following main sizes: a 750 mm dia. and 1200 mm dia. storm sewer, a 250 mm dia. sanitary sewer and a 300 mm dia. watermain. Refer to the City of Ottawa Bill Leathem UCC and "As-built" plan and profile drawings included in Appendix "C" for details.

Because the site will be connecting and outletting into the separated storm sewer system along Bill Leathem Drive in the City of Ottawa, therefore, the approval exemption under Ontario Regulations 525/98 would apply since storm water discharges from this site will outlet flow into a downstream storm sewer. Thus, an Environmental Compliance Approval (ECA) application will not be required to be submitted to the Ministry.

Proposed Warehouse/Office Building Site

A vehicle entrance located at the northwest corner of the lot is proposed to provide vehicular access to this property along with an access roadway from this entranceway to direct vehicular traffic in and out of the site. Vehicular parking will be available at the rear of the site, south of the proposed building as well as along the front (northside) of the building.

A. Water Supply

The proposed commercial building located within the Pressure Zone 2W2C at 96 Bill Leathem Drive is a 2-storey commercial building with no basement. The building has a footprint of 1,326 m^2 and contains 2-stories of office space with a total gross floor area of 752 m^2. The building also has a warehouse with a total gross floor area 892 m^2. The building is to be serviced by the 305 mm diameter watermain along Bill Leathem Drive.

The ground elevation on the property is approximately 89.7 m, as obtained from GeoOttawa elevation contours (**Figure 1** in Appendix "D"), and the Site Survey Plan also (see attached **Site Survey Plan** in Appendix "D").

Demand Projections

The demands were calculated using the City of Ottawa's Water Design Guidelines, where the consumption rate of 28,000 L/gross ha/da was used to estimate average day demands (AVDY). Maximum day (MXDY) demands were calculated by multiplying AVDY demands by a factor of 1.5. Peak hour (PKHR) demands were calculated by multiplying MXDY by a factor of 1.8. The consumption unit per gross hectare per day for the commercial use of the building was estimated based on the City of Ottawa's Water Design Guidelines. **Table 1** shows the estimated domestic demands of the proposed building.

Table 1: Estimated Domestic Demand

Unit Type	Unit Count	Consumption (L/gross ha/d)	AVDY		MXDY		PKHR	
			L/d	L/s	L/d	L/s	L/d	L/s
Commercial	0.164	28,000	4,604	0.05	6,906	0.08	12,432	0.14
Total	***0.164***		***4,604***	***0.05***	***6,906***	***0.08***	***12,432***	***0.14***

The fire flow required was determined following the Fire Underwriter Survey (FUS) method and is provided in the attached worksheet in Appendix "D". For this analysis, the building was classified as a non-combustible construction (assuming that all structural elements such as walls, floors and roof are constructed with a minimum 1-hour fire resistance rating and non-combustible material). Furthermore, the building contents were assumed as rapid burning, as a conservative approach depending on the intended use of the warehouse. Lastly, it is understood that the building will have a sprinkler system.

The resulting total required fire flow is 6,000 L/min (100 L/s) for a duration of 2 hours. Details are provided in the attached **FUS Fire Flow Calculations** in Appendix "D". The proposed **Site**

Plan in Appendix "D" attached was used to determine distances from the proposed building to the property lines. **Figure 2** in Appendix "D" provides separation distances from adjacent buildings.

In summary, the estimated water demands for the proposed building are as follows:

- AVDY = 4,604 L/d (0.05 L/s);
- MXDY = 6,906 L/d (0.08 L/s);
- PKHR = 12,432 L/d (0.14 L/s); and,
- Fire Flow (FUS) = 6,000 L/min (100 L/s).

Boundary Conditions

The Based on the City's **Water Boundary Conditions**, the proposed building falls in the pressure zone 2W2C under existing condition but will eventually be within the future zone SUC following a pressure zone reconfiguration. As such, two conditions (i.e., Existing and Future Condition) were analyzed. The HGL boundary conditions for 96 Bill Leathem Drive under existing and future conditions, as presented in **Table 2**, were provided by the City on July 20th, 2023 (see attached **Water Boundary Conditions Email** in Appendix "D")

Table 2: Boundary Conditions

Demand Scenario	Head (m) Existing Condition	Head (m) Future Condition
Minimum HGL (Peak Hour)	125.0	144.1
Maximum HGL (Average Day)	132.8	146.9
Maximum Day + Fire Flow (FUS – 6,000 L/min)	126.5	142.8

Hydraulic Analysis

Peak Hour & Average Day

During average day demands, the resulting maximum hydraulic gradeline of 132.8 m corresponds to a maximum pressure of 423 kPa (61 psi) under the existing condition. However, after the pressure zone reconfiguration, the maximum hydraulic gradeline would increase to 146.9 m, which corresponds to 561 kPa (81 psi). This value is slightly above the maximum pressure objective of 552 kPa (80 psi). Thus, as per the City guidelines, pressures exceeding 552 kPa (80 psi) will require reduction mitigation methods, which in turn could be achieved by adding a pressure reducing valve along the service line to the proposed building.

During peak hour demands, the resulting minimum hydraulic gradeline of 125.0 m corresponds to a peak hour pressure of 346 kPa (50 psi) under the existing condition. Subsequent to the pressure zone reconfiguration, the peak hour hydraulic gradeline would increase to 144.1 m corresponding to a minimum pressure of 533 kPa (77 psi). Peak hour pressure (both under the

existing condition and future condition) is above the minimum pressure objective of 276 kPa (40 psi) and is therefore considered acceptable.

Supporting Hydraulic Calculations are attached in Appendix D.

Maximum Day + Fire Flow

A maximum day plus fire flow hydraulic gradeline of 126.5 m corresponds to a residual pressure of 361 kPa (52 psi) at this location. Similarly, after pressure zone reconfiguration, the hydraulic gradeline of 142.8 m corresponds to a residual pressure of 521 kPa (76 psi) at this location. As such, both existing and future conditions are well above the minimum residual pressure requirements of 140 kPa (20 psi).

Based on Table 1 of Appendix I of the City of Ottawa Technical Bulletin ISTB-2018-02 and a desktop review (i.e., Google Street View) to confirm hydrant class, four (4) hydrants with known hydrant classes are located in the vicinity of the proposed building. Two (2) Class AA hydrants are within 75 m, both with a capacity contribution of up to 5,700 L/min. Two (2) others Class AA hydrants are within 150 m from the site, both with a capacity contribution of up to 3,800 L/min. The combined hydrant flow coverage for 96 Bill Leathem Drive is therefore 19,000 L/min, which is above the required fire flow (RFF) obtained from the FUS (6,000 L/min).

The hydrant coverage is illustrated in **Figure 3** attached in Appendix "D". A breakdown of the hydrant coverage is summarized in **Table 3**.

Table 3: Minimum Fire Hydrant Coverage

Building	Calculated Fire Flow Demand (L/min)	Fire Hydrants					Minimum Combined Hydrant Flow Coverage (L/min)
		Hydrant Class	Within 75 m		Between 75 m and 150 m		
			Quantity	Contrib. to RFF	Quantity	Contrib. to RFF	
96 Bill Leathem	6,000 (FUS)	AA	2	5,700	2	3,800	19,000
		A					
		B					
		C					

In conclusion, based on the boundary condition provided, the 305 mm dia. watermain on Bill Leathem Drive provides sufficient flow to meet the Fire Underwriter Survey (FUS) required fire flow.

Resulting pressures during anticipated demand flows meet the pressure objectives during peak demand conditions, as per the City of Ottawa's Drinking Water Design Guidelines. However, during average day demand conditions, the expected maximum pressure is slightly above the

maximum pressure objective of 552 kPa (80 psi). Thus, an individual pressure reducing valve is required along the service line to the proposed building.

B. Sanitary Flow

The peak sanitary flow for this site is estimated at Q = 0.49 L/s with an infiltration rate of 0.14 L/s. Refer to Appendix "E" Sheet 1 of 1 regarding sanitary flow calculations. This flow will enter the existing 250 mm dia. sanitary sewer on Bill Leathem Drive via the proposed 150 mm dia. PVC sanitary service lateral from the two-storey warehouse/office building.

Waste water from the Bill Leathem Drive 250 mm dia. sanitary sewer then in turn outlets east into the existing downstream 750 mm dia. concrete sanitary collector sewer located at Leikin Drive where the waste water further outlets east and north to the existing 1650 mm dia. Merivale Road sanitary trunk sewer.

C. Storm Flow

Stormwater outlet for this proposed property will be the existing 750 mm dia. and 1200 mm dia. storm sewer located on Bill Leathem Drive. The proposed warehouse/office building rooftop is flat and will be able to provide on-site stormwater management (SWM) storage. Roof water from the building will be drained and controlled by four (4) roof drains each with a maximum release rate of 0.95 L/s (15.0 US gal/min.) which then outlets directly into the existing Bill Leathem Drive 1200 mm dia. storm sewer via the proposed 150 mm dia. PVC storm pipe.

On-site drainage shall be graded and drained into (4) catch basin manholes where they are interconnected by oversized underground storm sewer ranging in size from 900 mm dia. to 1500 mm dia. and designed for SWM attenuation purposes.

The building foundation weeping-tile drainage system shall have its own separate pipe for gravity flow where weeping-tile water is outletted via a 150mm diameter storm pipe to the existing Bill Leathem Drive storm sewer. The stormwater outlet for the rooftop water from roof drains will be a separately designated proposed 150mm diameter PVC pipe that will also be outletted directly into the existing Bill Leathem Drive storm sewer.

Four (4) roof drains are proposed for this warehouse/office building to restrict flow at a rate of 0.95 L/s each or 4 x 0.95 L/s = 3.80 L/s into the existing municipal storm sewer. The calculated net allowable controlled release rate from this site is estimated at 18.42 L/s where 4.13 L/s is release off-site from uncontrolled drainage areas and the total allowable off-site flow is estimated at 22.55 L/s.

Based on the residential site plan from the owner's architect, the average post-development runoff coefficient is estimated at C = 0.85 and A = 0.4047 hectares.

An estimation of the pre-development flow condition was carried out using the criteria accepted by the City of Ottawa. If post-development C value exceeds the lesser of the C_{pre} = 0.24 then SWM is required. Because C_{post} = 0.85 for this site exceeds C_{pre} = 0.24 then SWM measures are required.

Therefore, based on our calculation, on-site retention is required for this proposed commercial development site, because the site post-development C value of 0.85 is greater than the C_{pre} = 0.24.

The storage volume for the five (5)-Year and up to the 100-Year storm event attenuation will be stored by means of flat rooftop of the proposed commercial building and by the oversized underground storm drainage pipe and structures on-site. Refer also to the site storm drainage report (Report No. R-822-125) for further details.

ECA Exemption

The Ministry of the Environment, Conservation and Parks (MECP) was contacted by the City of Ottawa staff on March 27, 2023 regarding status for exemption from an Industrial Sewer Works ECA and MECP confirmed on March 31, 2023 that based on proposed use (mixed office, warehousing, etc.) where tenants are not yet determined, the MECP agrees that this project is not defined as Industrial use. Therefore, presently, this project would meet the exemption criteria of O.Reg. 525/98 as the stormwater management works are designed for and located on a single parcel of land and is outletting to an existing storm sewer on Bill Leathem Drive (750mm dia. Conc. Storm Sewer on Bill Leathem Drive). Refer to Appendix "F" for details of correspondences between MECP and City of Ottawa relating to the ECA exemption status.

Conclusion

To develop this commercial site (±0.4047 ha. in size) and in controlling the 5-Year stormwater release rate off-site to an allowable rate of 22.55 L/s, a calculated site storage volume of approximately 70.10 m^3 (min.) is required during the 5-Year event, See Table No. 1 to 7 inclusive. We estimate that the required storage volume is 22.97 m^3 (min.) from rooftop storage and 47.13 m^3 (min.) from the site underground drainage system are necessary to attenuate the 5-Year storm event. Refer to the Storm Sewer Design Sheet (Sheet No. 1 of 1) in Appendix "D" of the Storm Drainage Report (Report No. R-822-125) for details of proposed storm sewer system for this site.

During the 5-Year storm event for the flat rooftop storage, the ponding depth on this rooftop is estimated at 120 mm at Drain No. 1, 2, 3, 4, 5 and 6 and 0 mm at the roof perimeter assuming a 1.3% (min.) roof pitch to the drains. The rooftop storage available at Roof Area No. 1 is 4.41 m^3, Roof Area No. 2 is 4.39 m^3, Roof Area No. 3 is 4.32 m^3, Roof Area No. 4 is 6.76 m^3, Roof Area No. 5 is 6.58 m^3, and Roof Area No. 6 is 6.77 for a total of 33.23 m^3 which is greater than the required volume of 22.97 m^3.

As for the remaining storage volume of 47.13 m^3 (min.) required from the site development area for the 5-Year storm event, the estimated H.W.L. of 88.22 m will provide a total available underground storage volume of 48.53 m^3 consisting of the proposed underground storm piping and drainage structures. In total, the 5-Year available site storage volume is approximately 81.76 m^3 which is greater than the required site storage volume of 70.10 m^3.

In order to control the 100-Year stormwater release rate off-site to an allowable rate of 22.55 L/s, a calculated site storage volume of approximately 108.89 m^3 (min.) is required during the 100-Year event. We estimate that the required storage volume of 53.99 m^3 (min.) of rooftop storage and 108.89 m^3 (min.) from the site underground drainage system are necessary to attenuate the 100-Year storm event. See Table No. 8 to 14 inclusive.

During the 100-year storm event for the flat rooftop storage, the ponding depth on this rooftop is estimated at 150 mm at Drain No. 1, 2, 3, 4, 5 and 6 and 0 mm at the roof perimeter assuming a 1.3% (min.) roof pitch to the drains. The rooftop storage available at Roof Area No. 1 is 8.87 m^3, Roof Area No. 2 is 8.53 m^3, Roof Area No. 3 is 8.63 m^3, Roof Area No. 4 is 13.11 m^3, Roof Area No. 5 is 12.90 m^3, and Roof Area No. 6 is 13.12 and for a total of 65.16 m^3 which is greater than the required volume of 53.99 m^3.

As for the remaining storage volume of 108.89 m^3 (min.) required from the site development area for the 100-Year storm event, the estimated H.W.L. of 90.05 m will provide a total available storage volume of 109.40 m^3 consisting of the proposed oversized underground storm piping and drainage structures. In total, the 100-Year available site storage volume is 174.56 m^3 which is greater than the required site storage volume of 162.88 m^3.

Therefore, by means of flat building rooftop storage, grading the site to the proposed grades and constructing the proposed underground storm piping and drainage system as shown on the Proposed Site Grading and Servicing Plan (Dwg. No. 822-125, G-1), the desirable 5-Year and 100-Year storm event attenuation volume of 81.76 m^3 and 174.56 m^3 respectively will be available on-site.

In order to control the release flow rate off-site from the controlled drainage area of the lot, an inlet control device (ICD) will be installed at the outlet of CB/MH#1 in the 375mm diameter storm pipe (outlet pipe) with Q = 12.85 L/s under a head of 2.54 m. A rooftop drain with a release rate of 0.95 L/s will be installed at Roof Drain #1, #2, #3, #4, #5 and #6 of the proposed warehouse/office building flat rooftop as depicted on (Dwg. No. 822-125, G-1). The 5-Year and 100-Year flow off-site is restricted to 22.55 L/s.

An inlet control device (ICD) will be installed at the outlet of CB/MH#1 in the 375 mm diameter storm pipe (outlet pipe) with Q = 12.85 L/s under a head of 2.54 m. The ICD type recommended is a Hydrovex Regulator (100-VHV-1) or equivalent.

The building weeping tile drainage will outlet via its separate 150mm diameter PVC storm lateral. The roof drains will be outletted also via a separate 150mm diameter PVC storm lateral from the office building which "wye" into the proposed 150mm dia. weeping tile storm lateral, where upon both laterals are outletting to the existing Bill Leathem Drive 750mm diameter storm sewer with only one (1) connection. The City of Ottawa recommends that pressurized drain pipe material be used in the building for the roof drain leader pipe in the event of surcharging in the City storm sewer system. Refer to the proposed site grading and servicing plan Dwg. No. 822-125-G-1 for details.

To achieve a minimum of 80 percent TSS removal, a Stormceptor structure (Model EFO-4) is proposed to be installed for the site development of this property. This Stormceptor structure shall be located downstream of the proposed CB/MH#1, which houses the site's inlet control device (ICD). Based on the Stormceptor system that is proposed for this site, size of the lot, and impervious ratio, a greater than 80 percent TSS removal is estimated for all rainfall events including large storms.

Erosion and Sediment Control

The contractor shall implement Best Management Practices to provide for protection of the receiving storm sewer during construction activities. These practices are required to ensure no sediment and/or associated pollutants are released to the receiving watercourse. These practices include installation of a "siltsack" catch basin sediment control device or equal in catch basins as recommended by manufacturer on-site and off-site within the Bill Leathem Drive road right of way adjacent to this property. Siltsack shall be inspected every 2 to 3 weeks and after major storm. The deposits will be disposed of as per the requirements of the contract. Additionally, silt sacs shall be placed on all storm sewer maintenance hole openings during construction. A mud mat is proposed to be installed at the construction site access in order to protect the public road right of way from potential construction traffic damages. See Dwg. #822-125 ESC-1 for details.

Refer to Appendix G for the summary of the Development Servicing Study Checklist that is applicable to this development.

PREPARED BY T.L. MAK ENGINEERING CONSULTANTS LTD.

TONY L. MAK, P.ENG

PROPOSED

TWO STOREY COMMERCIAL WAREHOUSE AND OFFICE

BUILDING SITE

PART OF LOT 18

CONCESSION 1 (RIDEAU FRONT)

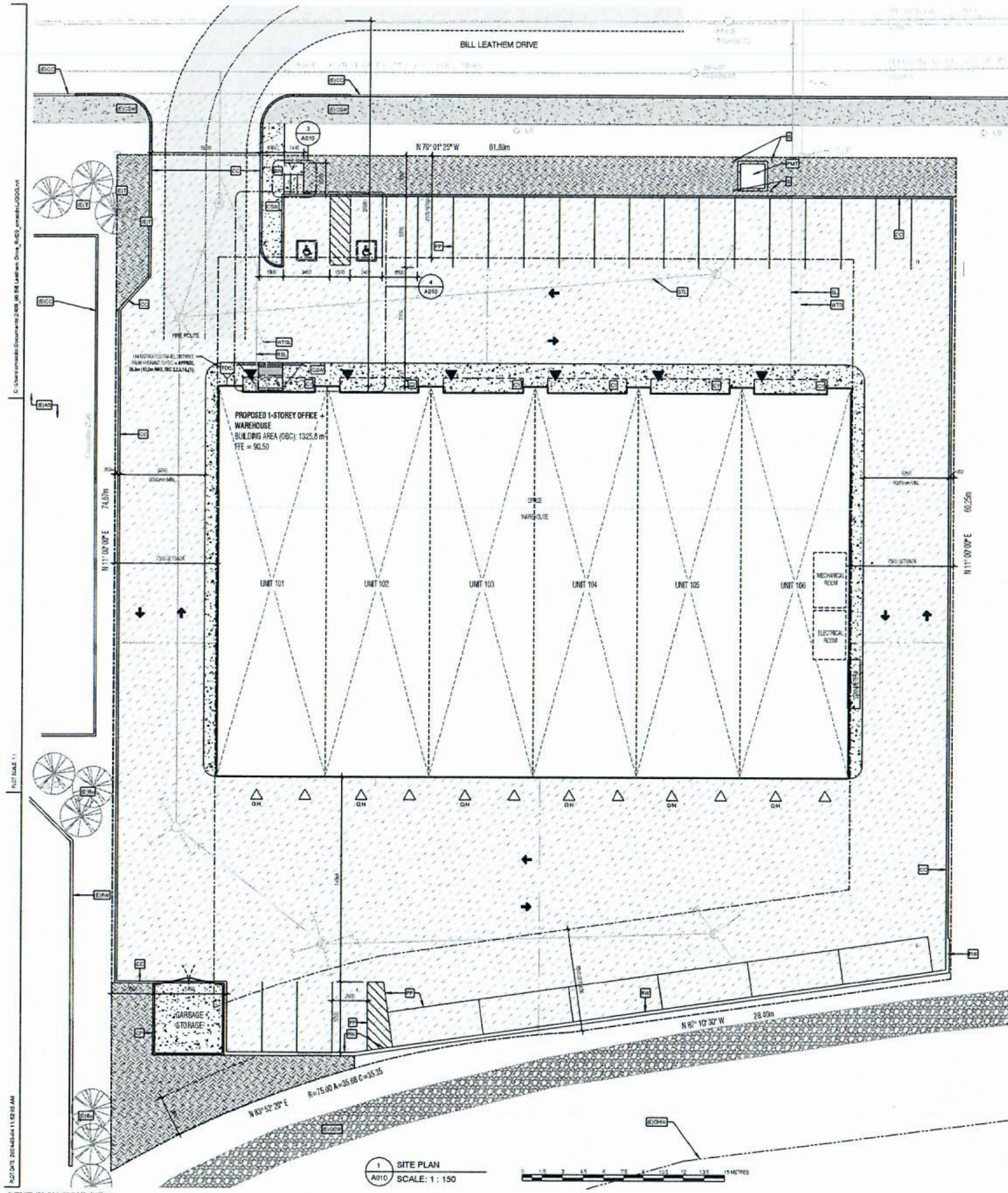
GEOGRAPHIC TOWNSHIP OF NEPEAN

96 BILL LEATHEM DRIVE

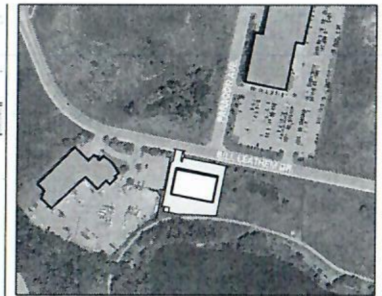
CITY OF OTTAWA

APPENDIX A

SITE PLAN AND LEGAL SURVEY PLAN



1 SITE PLAN
A010 SCALE: 1 : 150



2 LOCATION PLAN
A010 SCALE: 1 : 2500

SITE PLAN NOTES

NOTE#	NOTE
(E)AS	Existing Asphalt Surface - Refer to Survey
(E)Bu	Existing Bushes - Refer to Survey
(E)CC	Existing Concrete Curb - Refer to Survey
(E)CSW	Existing Concrete Sidewalk - Refer to Survey
(E)GSW	Existing Gravel Sidewalk - Refer to Survey
(E)OHW	Existing Overhead Utility Wires - Refer to Survey
(E)RW	Existing Retaining Wall - Refer to Survey
(E)T	Existing Tree - Refer to Survey
B	Bollard, 6mm x 125mm dia. x 1050mm painted galvanized steel bollard c/w welded cap and 6mm x 150mm base plate with 4 bolt holes; secure to pavement or sidewalk at locations indicated with 16mm dia. galvanized concrete or asphalt anchors dependant on location.
BFPS	Provide vertically-mounted sign, minimum 300mm wide x 600mm high, marked with International Symbol of Accessibility. Mount not less than 1500mm above grade and not more than 2000mm above grade. Ensure tonal contrast between BF Parking Sign and background environment. Provide information text compliant with City of Ottawa By Law requirements. Provide additional building signage that identifies Type 'A' spaces as "VAN ACCESSIBLE / FOURGONNETTE ACCESSIBLE".
BR	Bike Rack - Refer to Landscape
CC	Concrete Curb - Refer to Civil
CP	Concrete Pad - Refer to Civil
CSW	Concrete Sidewalk - Refer to Civil
CY	Canopy c/w Recessed Pot Lights - Refer to Electrical
PMT	Pad Mount Transformer - Refer to Civil
PP	Painted Parking Lines, Typ. - Refer to Civil
RSL	Roof Storm Line - Refer to Civil
RW	Retaining Wall - Refer to Civil
SL	Sanitary Line - Refer to Civil
STL	Storm Line - Refer to Civil
TWSI	Tactile Walking Surface Indicator (TWSI), Full Width of curb ramp, Recessed to be flush with concrete walking surface. - Refer to Civil
WTS	Water Service - Refer to Civil
WTSL	Weeping Tile Storm Line - Refer to Civil

SITE PLAN SYMBOLS

ICON	DESCRIPTION
	Existing Buildings
	Proposed Buildings
	Property Lines
	Setback Lines
	Overhead Wires
	Fence
	Road Lanes
	Proposed Concrete Curb
	Depressed Concrete Curb
	Existing Concrete Pad/Sidewalk
	Proposed Concrete Pad/Sidewalk
	Proposed Asphalt Driving Surface
	Existing Asphalt
	Soft Landscaping
	Existing Landscape Area
	Proposed Landscape Area
	Barrier Free Parking Space
	Exterior Bicycle Parking Spot with Bollard Style Bike Rack
	Two Way Vehicle Circulation
	Principal Entrance Door
	Exterior Door ("OH" indicates Overhead Door)
	Exterior Fire Route Fire Route (12m centerline radius on all turns, TYP.)

PROPERTY LEGAL DESCRIPTION

PART 1
PLAN 4R-29258
of part of
LOT 18
CONCESSION 1
GEOGRAPHIC TOWNSHIP OF NEPEAN, CITY OF OTTAWA
PIN 04733 - 7026.

CITY OF OTTAWA
Prepared by Annis, O'Sullivan, Vollebekk Ltd.
Plan dated May 3, 2023

PROJECT ZONING REVIEW STATISTICS

MUNICIPALITY:	CITY OF OTTAWA
MUNICIPAL ADDRESS:	96 BILL LEATHEM DRIVE
REGISTERED OWNER:	[illegible] BUILDING CORP.
LOT AREA:	[illegible]
ZONING ANALYSIS:	
OTTAWA	
ZONE:	[illegible] Zone
PROPOSED USE:	1 STOREY OFFICE + WAREHOUSE

BUILDING AREAS

	GROSS FLOOR AREA sq. m.	sq. ft.
BUILDING FOOTPRINT	1315.0m²	14154.6 sq. ft.
GROUND FLOOR GROSS AREA	1277.0m²	13745.8 sq. ft.
TOTAL GROSS FLOOR AREA	1277.0m²	13745.8 sq. ft.

DEVELOPMENT STANDARDS

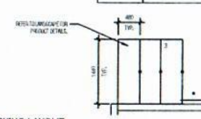
	REQUIRED	PROPOSED
BUILDING HEIGHT	22.0m MAX.	7.3m
FRONT YARD SETBACK	7.5m MIN.	15m
CORNER SIDE YARD SETBACK	7.5m MIN.	N/A
REAR YARD SETBACK	7.5m MIN.	7.5m
INTERIOR SIDE YARD SETBACK	7.5m MIN.	15m
STORIES ABOVE GRADE	-	1
MINIMUM WIDTH OF LANDSCAPED AREA AROUND A PARKING LOT	NO MINIMUM	-
MINIMUM WIDTH OF LANDSCAPED AREA	ABUTTING A STREET - 3.0M	3.0M

PARKING SPACES

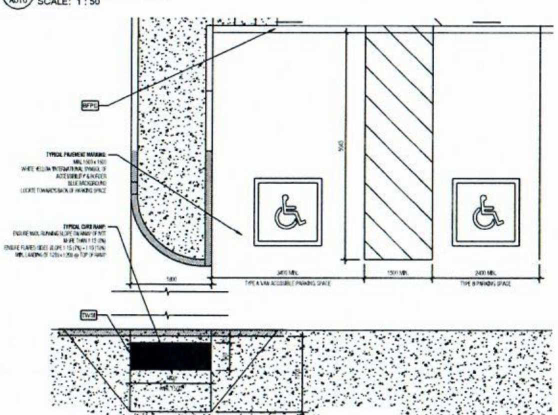
	REQUIRED	PROPOSED
VEHICULAR PARKING SPACES AREA 'C' (TABLE 101 - N/P AND W/R)	OFFICE (N/R) [illegible] = [illegible] SPACES; WAREHOUSE (N/R) [illegible] = 7.0 SPACES	[illegible] SPACES
ACCESSIBLE VEHICULAR PARKING SPACES	1 SPACES (1 TYPE B)	2 SPACES (1 TYPE A + 1 TYPE B)
TOTAL GROSS FLOOR AREA	16 SPACES	21 SPACES

BICYCLE PARKING

	REQUIRED	PROPOSED
BICYCLE PARKING SPACES (TABLE 111A (a))	1 PER 250.0M² FOR OFFICE/2000M² FOR WAREHOUSE OF GFA	3 SPACES
TOTAL GROSS FLOOR AREA	3 SPACES	3 SPACES



3 BICYCLE PARKING LAYOUT
A010 SCALE: 1 : 50



4 BF PARKING DETAIL
A010 SCALE: 1 : 50

NOTES
Contractor shall check and verify all dimensions on site and report any discrepancies to the Architect before proceeding.

ISSUED

no.	revision	date
1	ISSUED FOR SPA	Oct 31-2023

383 Parkdale Avenue, Suite 201
Ottawa, Ontario, Canada, K1Y 4R4
KWC ARCHITECTS INC.
PHONE 613 238-2117
FAX 613 238-6595
EMAIL kwc@kwc-arch.com

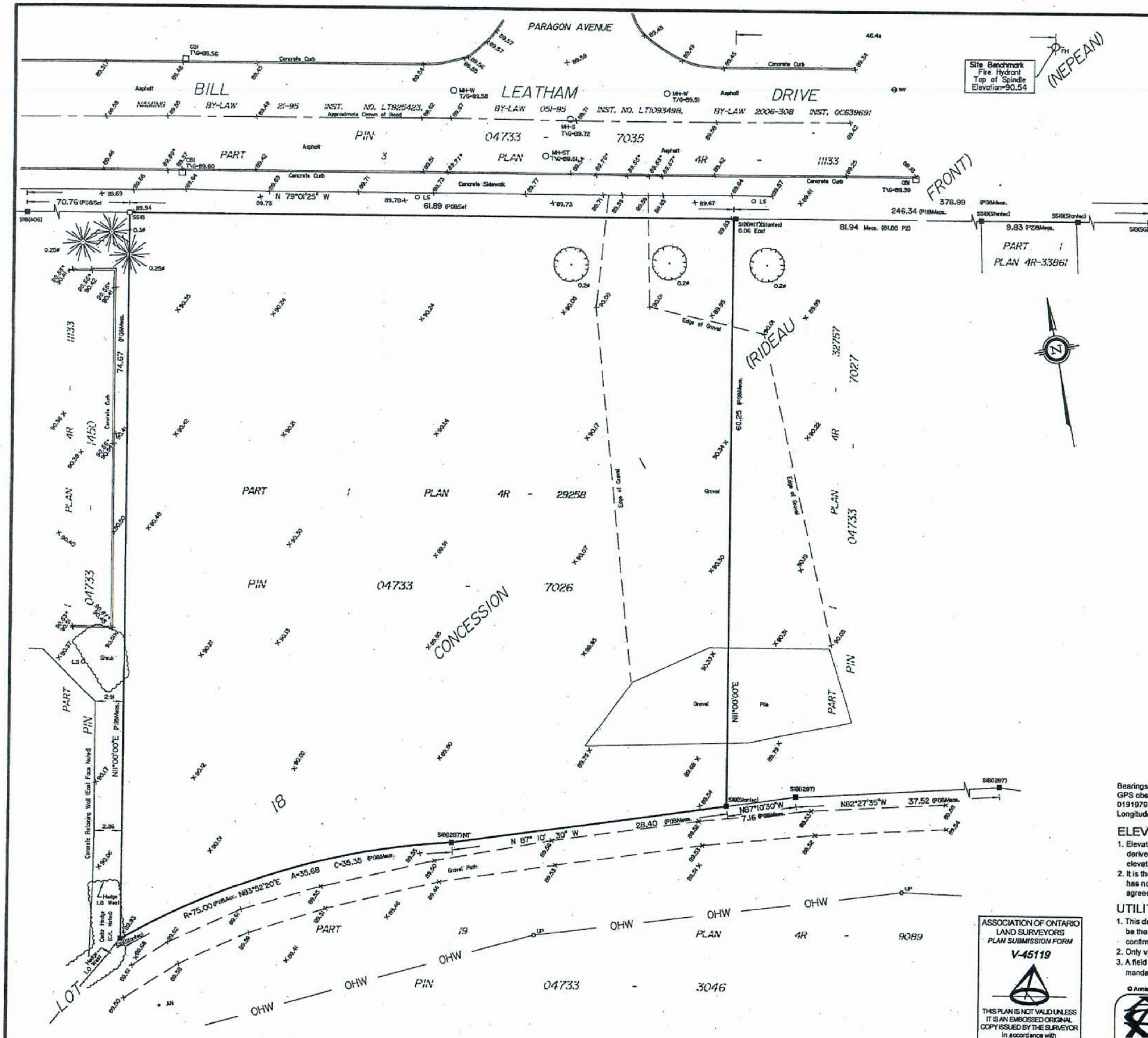
1-STOREY OFFICE + WAREHOUSE

96 BILL LEATHAM DRIVE, OTTAWA, ONTARIO

designed by	MM/CM	approved by	MM
drawn by	CM	project no.	2406
date	Jan 29-2024	scale	as noted

SITE PLAN

revision 1 sheet no. A010



TOPOGRAPHIC PLAN OF SURVEY OF

PART OF LOT 18
CONCESSION 1
(RIDEAU FRONT)
GEOGRAPHIC TOWNSHIP OF NEPEAN
CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Scale 1 : 250

10 7.5 5.0 2.5 0 5 10 Metres

Metric

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act and the Surveyors Act and the regulations made under them.
2. The survey was completed on the 3rd day of May, 2023.

May 5/23
Date

V. Andrew Shelp
Ontario Land Surveyor

Notes & Legend

	Denotes	
—□—	-	Survey Monument Planted
—■—	-	Survey Monument Found
SIB	-	Standard Iron Bar
SSIB	-	Short Standard Iron Bar
IB	-	Iron Bar
(WIT)	-	Witness
Meas.	-	Measured
(AOG)	-	Annis, O'Sullivan, Vollebekk Ltd.
Acc.	-	Accepted
(P1)	-	Plan 4R-29258
(P2)	-	Plan 4R-33861
(P3)	-	Plan 4R-11133
O MH-ST	-	Maintenance Hole (Storm Sewer)
O MH-S	-	Maintenance Hole (Sanitary)
O MH-W	-	Maintenance Hole (Watermain)
O UP	-	Utility Pole
— OHW —	-	Overhead Wires
O LS	-	Light Standard
□ CB	-	Inlet Catch Basin
FH	-	Fire Hydrant
WV	-	Water Valve
T/G	-	Top of Grate
NT	-	Not Tangential
+ 65.00	-	Location of Elevations
+ 65.00*	-	Top of Concrete Curb Elevation
———	-	Property Line

Bearings are grid, derived from Can-Net 2016 Real Time Network GPS observations and are referenced to Specified Control Points 01919791338 and 01919871649, MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

ELEVATION NOTES

1. Elevations shown are geodetic and are referred to the CGVD28 geodetic datum and derived from City of Ottawa control monument 019680090 having a published elevation of 88.831 metres.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-45119

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1020, Section 29 (3).

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors

Job No. 23867-23 Prestige Design PtLot 18 Con 1 (RF) O D2 | ND

PROPOSED

TWO STOREY COMMERCIAL WAREHOUSE AND OFFICE

BUILDING SITE

PART OF LOT 18

CONCESSION 1 (RIDEAU FRONT)

GEOGRAPHIC TOWNSHIP OF NEPEAN

96 BILL LEATHEM DRIVE

CITY OF OTTAWA

APPENDIX B

SITE PRE-DEVELOPMENT CONDITION

GOOGLE IMAGE (2019)

AND

AERIAL PHOTOGRAPHY 2022 (GEOOTTAWA)

2019


prom. Bill Leathem Dr.
av. Paragon Ave.
prom. Bill Lea
PROPOSED
DEVELOPMENT SITE
90
95
102

2022


prom. Bill Leathem Dr.
av. Paragon Ave.
prom. Bill Leathem Dr.
PROPOSED
DEVELOPMENT SITE
96
90
96
102

2022

PROPOSED

TWO STOREY COMMERCIAL WAREHOUSE AND OFFICE

BUILDING SITE

PART OF LOT 18

CONCESSION 1 (RIDEAU FRONT)

GEOGRAPHIC TOWNSHIP OF NEPEAN

96 BILL LEATHEM DRIVE

CITY OF OTTAWA

APPENDIX C

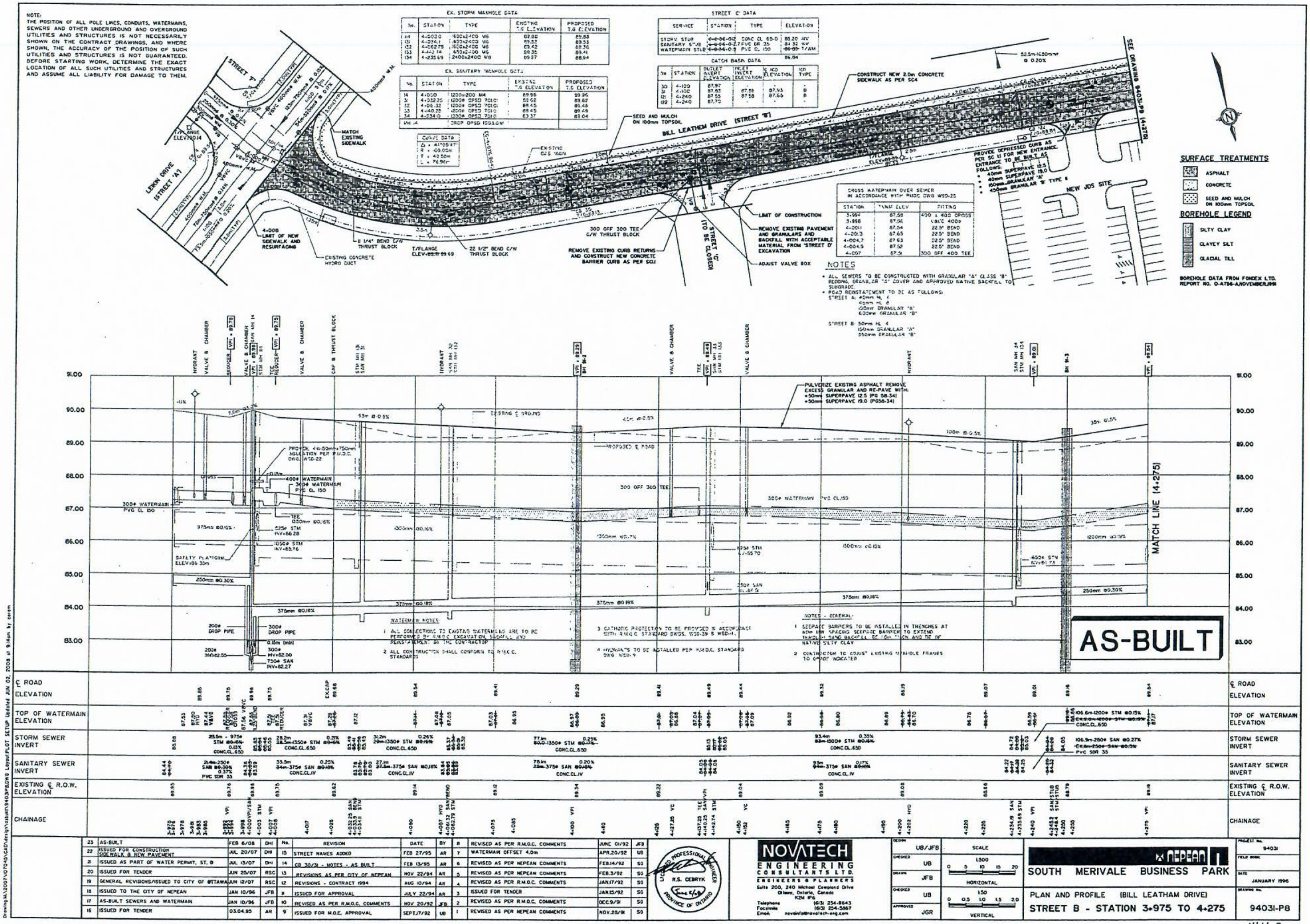
BILL LEATHEM DRIVE

CITY OF OTTAWA

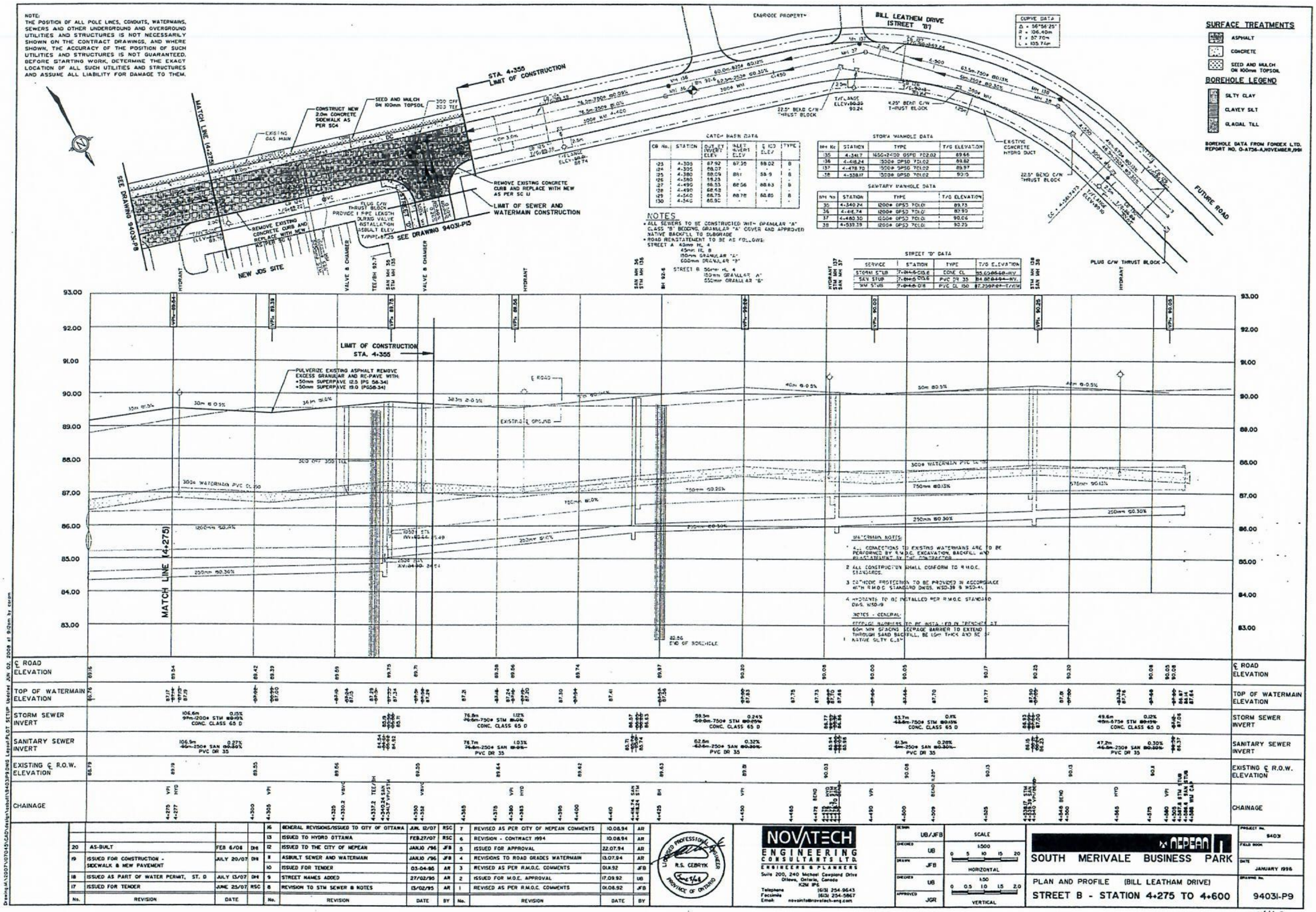
PLAN AND PROFILE

AND

UCC DRAWINGS


NOTE:
THE POSITION OF ALL POLE LINES, CONDUITS, WATERMAINS, SEWERS AND OTHER UNDERGROUND AND OVERGROUND UTILITIES AND STRUCTURES IS NOT NECESSARILY SHOWN ON THE CONTRACT DRAWINGS, AND WHERE SHOWN, THE ACCURACY OF THE POSITION OF SUCH UTILITIES AND STRUCTURES IS NOT GUARANTEED. BEFORE STARTING WORK, DETERMINE THE EXACT LOCATION OF ALL SUCH UTILITIES AND STRUCTURES AND ASSUME ALL LIABILITY FOR DAMAGE TO THEM.
EX. STORM MANHOLE DATA
EX. SANITARY MANHOLE DATA
STREET 'C' DATA
CATCH BASIN DATA
BILL LEATHEM DRIVE (STREET 'B')
LEIKIN DRIVE (STREET 'A')
STREET 'F'
STREET 'C' (TO BE CLOSED)
SEE DRAWING 94031-P9 (4+275)
NEW JOB SITE
SURFACE TREATMENTS
ASPHALT
CONCRETE
SEED AND MULCH ON 100mm TOPSOIL
BOREHOLE LEGEND
SILTY CLAY
CLAYEY SILT
GLACIAL TILL
BOREHOLE DATA FROM FONDEX LTD. REPORT NO. O-AT56-A,NOVEMBER,1991
NOTES
MATCH LINE (4+275)
AS-BUILT
¢ ROAD ELEVATION
TOP OF WATERMAIN ELEVATION
STORM SEWER INVERT
SANITARY SEWER INVERT
EXISTING ¢ R.O.W. ELEVATION
CHAINAGE
NOVATECH ENGINEERING CONSULTANTS LTD.
ENGINEERS & PLANNERS
R.S. CEBRYK
NEPEAN
SOUTH MERIVALE BUSINESS PARK
PLAN AND PROFILE (BILL LEATHAM DRIVE)
STREET B - STATION 3+975 TO 4+275
JANUARY 1996
94031-P8

14160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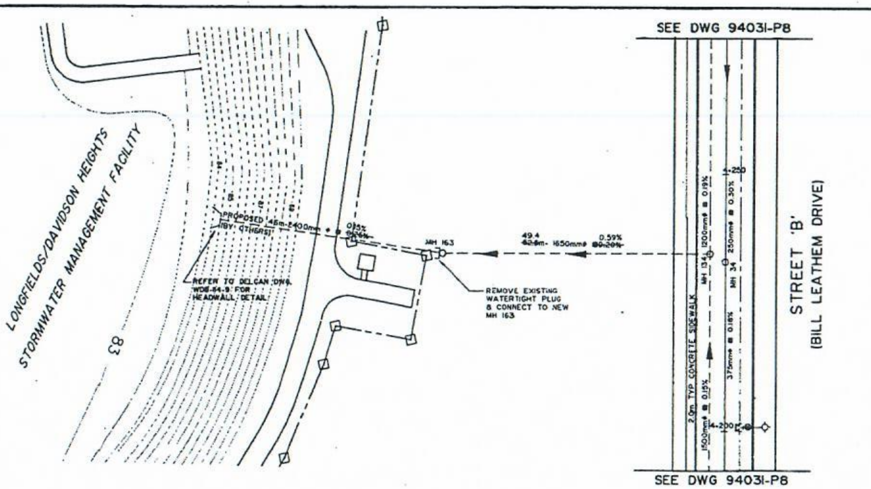
BILL LEATHEM DRIVE (STREET 'B')
STA. 4+355 LIMIT OF CONSTRUCTION
MATCH LINE (4+275)
SEE DRAWING 9403I-P8
SEE DRAWING 9403I-P15
NEW JDS SITE
FUTURE ROAD
LIMIT OF SEWER AND WATERMAIN CONSTRUCTION
REMOVE EXISTING CONCRETE CURB AND REPLACE WITH NEW AS PER SC LI
CONSTRUCT NEW 2.0m CONCRETE SIDEWALK AS PER SC4
SEED AND MULCH ON 100mm TOPSOIL
SURFACE TREATMENTS
ASPHALT
CONCRETE
SEED AND MULCH ON 100mm TOPSOIL
BOREHOLE LEGEND
SILTY CLAY
CLAYEY SILT
GLACIAL TILL
BOREHOLE DATA FROM FONDEX LTD. REPORT NO. O-A756-A,NOVEMBER,1991
CATCH BASIN DATA
STORM MANHOLE DATA
SANITARY MANHOLE DATA
STREET 'D' DATA
NOTES
LIMIT OF CONSTRUCTION STA. 4+355
WATERMAIN NOTES
C ROAD ELEVATION
TOP OF WATERMAIN ELEVATION
STORM SEWER INVERT
SANITARY SEWER INVERT
EXISTING C R.O.W. ELEVATION
CHAINAGE
NOVATECH ENGINEERING CONSULTANTS LTD.
ENGINEERS & PLANNERS
Suite 200, 240 Michael Cowpland Drive Ottawa, Ontario, Canada K2M 1P6
Telephone (613) 254-9643
Facsimile (613) 254-5867
R.S. CEBRYK
PROVINCE OF ONTARIO
NEPEAN
SOUTH MERIVALE BUSINESS PARK
PLAN AND PROFILE (BILL LEATHAM DRIVE)
STREET B - STATION 4+275 TO 4+600
JANUARY 1996
9403I-P9

14160



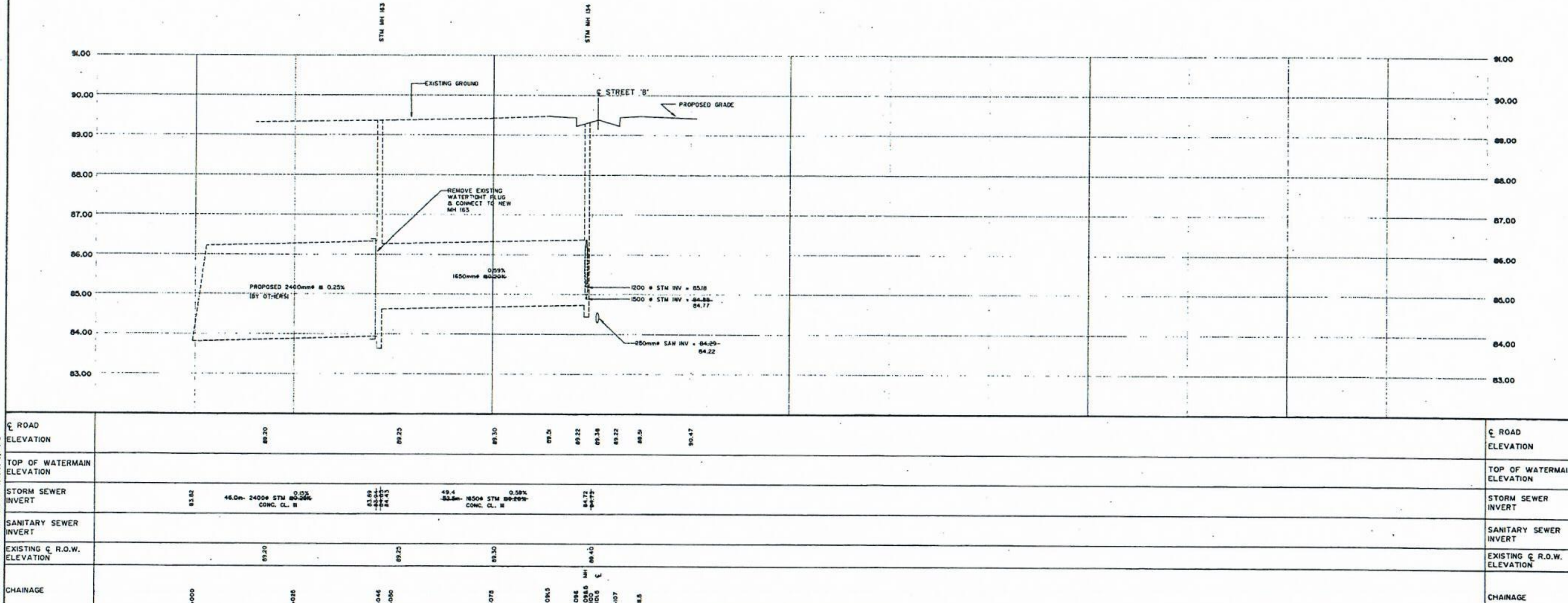
STORM MANHOLE DATA

No.	STATION	TYPE	T.G ELEVATION
134 163	0+098.5 0+046	2400x2400 M8 2400x3000 M9	89.29 89.25

SANITARY MANHOLE DATA

No.	STATION	TYPE	T.G ELEVATION
34	0+101.5	1200Ø OPSD 701.01M	89.38

SEEPAGE BARRIERS REQUIRED AT MH 60m SPACING



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No.	REVISION	DATE	BY
10	ISSUED TO THE CITY OF NEPEAN	JAN. 30/96	JFB
9	AS-BUILTS AS PER NEPEAN COMMENTS	MAY 10/93	JFB
8	AS-BUILTS AS PER NEPEAN COMMENTS	MAR.26/93	JFB
6	WATERMAIN OFFSET 4.0m	APR.20/92	UB
5	REVISED AS PER NEPEAN COMMENTS	FEB.14/92	SG
4	REVISED AS PER NEPEAN COMMENTS	FEB.3/92	SG
3	ISSUED FOR TENDER	JAN.15/92	SG
2	REVISED AS PER R.M.O.C. COMMENTS	DEC.9/91	SG
1	REVISED AS PER NEPEAN COMMENTS	NOV.26/91	SG

LICENSED PROFESSIONAL ENGINEER S.M. GORDON PROVINCE OF ONTARIO

LICENSED PROFESSIONAL ENGINEER UDO BOEHME PROVINCE OF ONTARIO

NOVATECH
ENGINEERING CONSULTANTS LTD
OTTAWA, ONTARIO

DESIGN	UB/JFB
CHECKED	UB
DRAWN	JFB
CHECKED	UB
APPROVED	JGR

SCALE
1:500 HORIZONTAL 0 5 10 15 20
1:50 VERTICAL 0 0.5 1.0 1.5 2.0

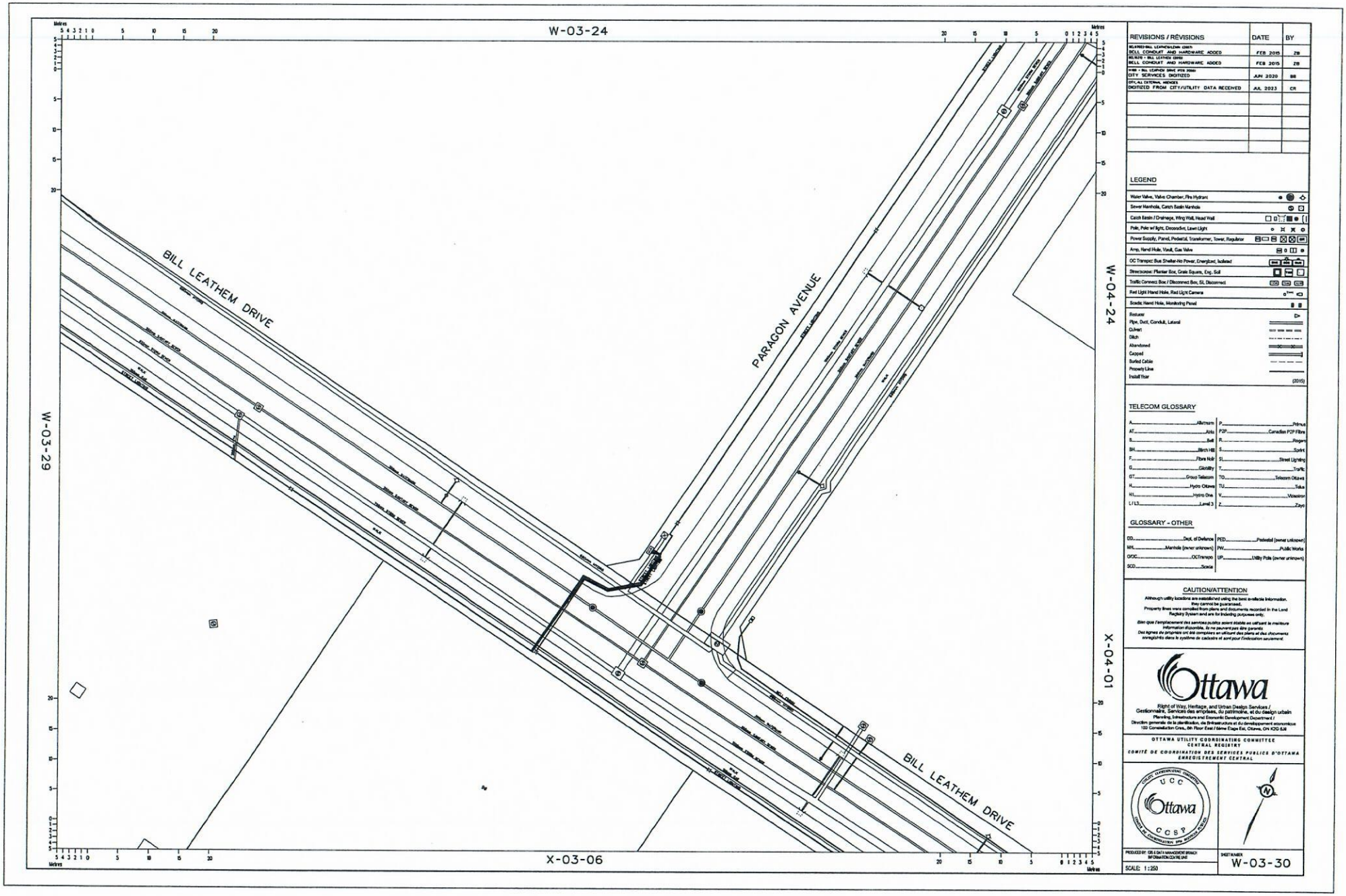
NEPEAN

SOUTH MERIVALE BUSINESS PARK
AS-BUILTS

PLAN AND PROFILE
STORM SEWER OUTLET

PROJECT No. 94031
DATE JANUARY 1996
DRAWING No. 94031-P01

Jan 31, 1996 - 14:33:32 DWG Name: D:\NOVA\94031\94031P01.DWG Updated By: JFB



REVISIONS / RÉVISIONS	DATE	BY
BELL CONDUIT AND HARDWARE ADDED	FEB 2015	ZB
BELL CONDUIT AND HARDWARE ADDED	FEB 2015	ZB
CITY SERVICES DIGITIZED	JUN 2020	BB
DIGITIZED FROM CITY/UTILITY DATA RECEIVED	JUL 2023	CR

LEGEND

Water Valve, Valve Chamber, Fire Hydrant
Sewer Manhole, Catch Basin Manhole
Catch Basin / Drainage, Wing Wall, Head Wall
Pole, Pole w/ light, Decorative, Lawn Light
Power Supply, Panel, Pedestal, Transformer, Tower, Regulator
Amp, Hand Hole, Vault, Gas Valve
OC Transpo: Bus Shelter-No Power, Energized, Isolated
Streetscape: Planter Box, Grate Square, Exp. Soil
Traffic Connect Box / Disconnect Box, SL Disconnect
Red Light Hand Hole, Red Light Camera
Scada: Hand Hole, Monitoring Panel

Restorer
Pipe, Duct, Conduit, Lateral
Culvert
Ditch
Abandoned
Capped
Buried Cable
Property Line
Install Year (2015)

TELECOM GLOSSARY

A Allstream	P Primus
AT Aliant	P2P Canadian P2P Fibre
B Bell	R Rogers
BH Birch Hill	S Sprint
F Fibre Hub	SL Street Lighting
G Glentilly	T Traffic
GT Group Telecom	TO Telecom Ottawa
H Hydro Ottawa	TU Telus
H1 Hydro One	V Videotron
L / L3 Level 3	Z Zayo

GLOSSARY - OTHER

DD Dept. of Defence	PED Pedestal (owner unknown)
MH Manhole (owner unknown)	PW Public Works
OCC OCTranspo	UP Utility Pole (owner unknown)
SCD Scada	

CAUTION/ATTENTION

Although utility locations are established using the best available information, they cannot be guaranteed.
Property lines were compiled from plans and documents recorded in the Land Registry System and are for indexing purposes only.

Bien que l'emplacement des services publics soient établis en utilisant le meilleure information disponible, ils ne peuvent pas être garantis.
Des lignes de propriété ont été compilées en utilisant des plans et des documents enregistrés dans le système de cadastre et sont pour l'indexation seulement.

Ottawa

Right of Way, Heritage, and Urban Design Services / Gestionnaire, Services des emprises, du patrimoine, et du design urbain
Planning, Infrastructure and Economic Development Department / Direction générale de la planification, de l'infrastructure et du développement économique
100 Constellation Crescent, 9th Floor East / 9ème Étage Est, Ottawa, ON K2G 5J8

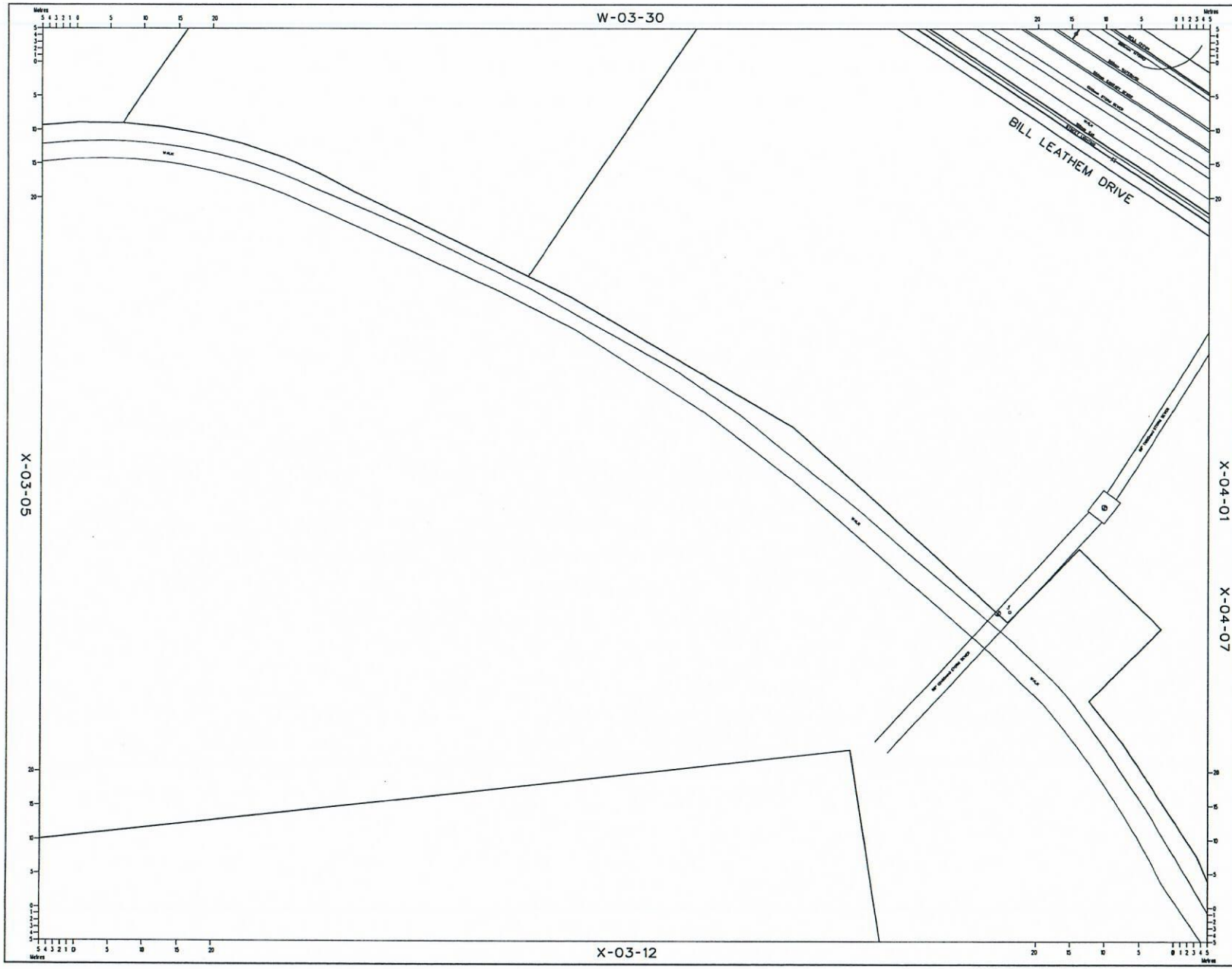
OTTAWA UTILITY COORDINATING COMMITTEE
CENTRAL REGISTRY
COMITÉ DE COORDINATION DES SERVICES PUBLICS D'OTTAWA
ENREGISTREMENT CENTRAL

UCC Ottawa CCSP

PRODUCED BY: GIS & DATA MANAGEMENT BRANCH
INFORMATION CENTRE UNIT

SCALE: 1:250

SHEET NUMBER
W-03-30



REVISIONS / RÉVISIONS	DATE	BY
BELL CONDUIT AND HARDWARE ADDED	FEB 2015	ZB
COMPILED/DIGITIZED FROM UTILITY/CITY DATA	JUL 2023	CR

LEGEND

- Water Valve, Valve Chamber, Fire Hydrant
- Sewer Manhole, Catch Basin Manhole
- Catch Basin / Drainage, Wing Wall, Head Wall
- Pole, Pole w/ light, Decorative, Lawn Light
- Power Supply, Pamd, Pedestal, Transformer, Tower, Regulator
- Amp, Hand Hole, Vault, Gas Valve
- OC Transpo: Bus Shelter-No Power, Energized, Isolated
- Streetscape: Planter Box, Grate Square, Eng. Soil
- Traffic Connect Box / Disconnect Box, SL Disconnect
- Red Light Hand Hole, Red Light Camera
- Scada: Hand Hole, Monitoring Panel
- Reducer
- Pipe, Duct, Conduit, Lateral
- Culvert
- Ditch
- Abandoned
- Capped
- Buried Cable
- Property Line
- Install Year (2015)

TELECOM GLOSSARY

A	Allstream	P	Primus
AT	Aliant	P2P	Canadian P2P Fibre
B	Bell	R	Rogers
BH	Birch Hill	S	Sprint
F	Fibre Noir	SL	Street Lighting
G	Globility	T	Traffic
GT	Group Telecom	TO	Telecom Ottawa
H	Hydro Ottawa	TU	Telus
H1	Hydro One	V	Videotron
L1/L3	Level 3	Z	Zayo

GLOSSARY - OTHER

DD	Dept. of Defence	PED	Pedestal (owner unknown)
MH	Manhole (owner unknown)	PW	Public Works
OCOC	OC Transpo	UP	Utility Pole (owner unknown)
SCD	Scada		

CAUTION/ATTENTION

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100 Constellation Cres., 6th Floor East / 6ème Étage Est, Ottawa, ON K2G 0A6

OTTAWA UTILITY COORDINATING COMMITTEE
CENTRAL REGISTRY
COMITÉ DE COORDINATION DES SERVICES PUBLICS D'OTTAWA
ENREGISTREMENT CENTRAL

UCC Ottawa CCSP

PRODUCED BY: GIS & DATA MANAGEMENT BRANCH
INFORMATION CENTRE UNIT

SCALE: 1:250

SHEET NUMBER
X-03-06

Recommendations from Soils Report No 56449-1 by J. D Patterson & Associates Ltd. amended by discussion.

Pumping in quantity below the ground water table will be required
Use 10mm clear crushed stone pipe bedding if it cannot be placed in dry conditions.

Before using wet excavated material for trench backfill it shall be spread & dried out on site
Install clay dikes in each service trench exiting the site.
Backfill the excavation for manholes & catchbasins with Granular B, Type 1 or 2
Provide from each manhole & catchbasin 100 dia weeping tile with sock in four directions, each tile 10m long & set at 150 below subgrade of road construction & surrounded with 100mm clear crushed stone
Before placing any Granular B in the road construction the subgrade shall be inspected & approved by a Soils Engineer
Protect the road subgrade from surface water & traffic to prevent softening. Any soft areas to be excavated and the void filled with Granular B, Type 1 or 2 as instructed by the Soils Engineer.

LEGEND

91/	indicates	extg grade
91	"	proposed grade
(90)	"	finished grade on Street B when finished
(RM)	"	remote water meter
Om	"	approx meter location
DC	"	depressed curb to NS 300 & NS600

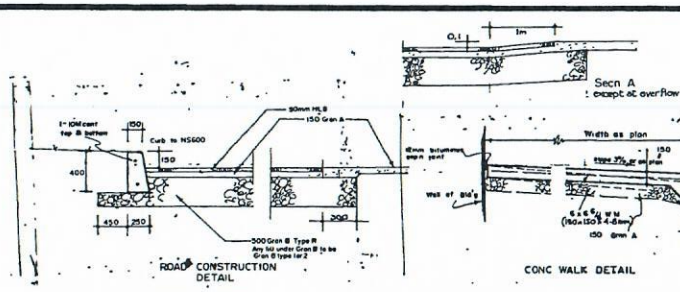
Service Laterals

Sanitary 150 øPVC SDR 28 - min grade 1.0% - inv at bldg 884 - inv at edge of ROW 881

Water Service 150ø PVC Class 150 - Tyton joints - C.I. fittings - 2.4m cover

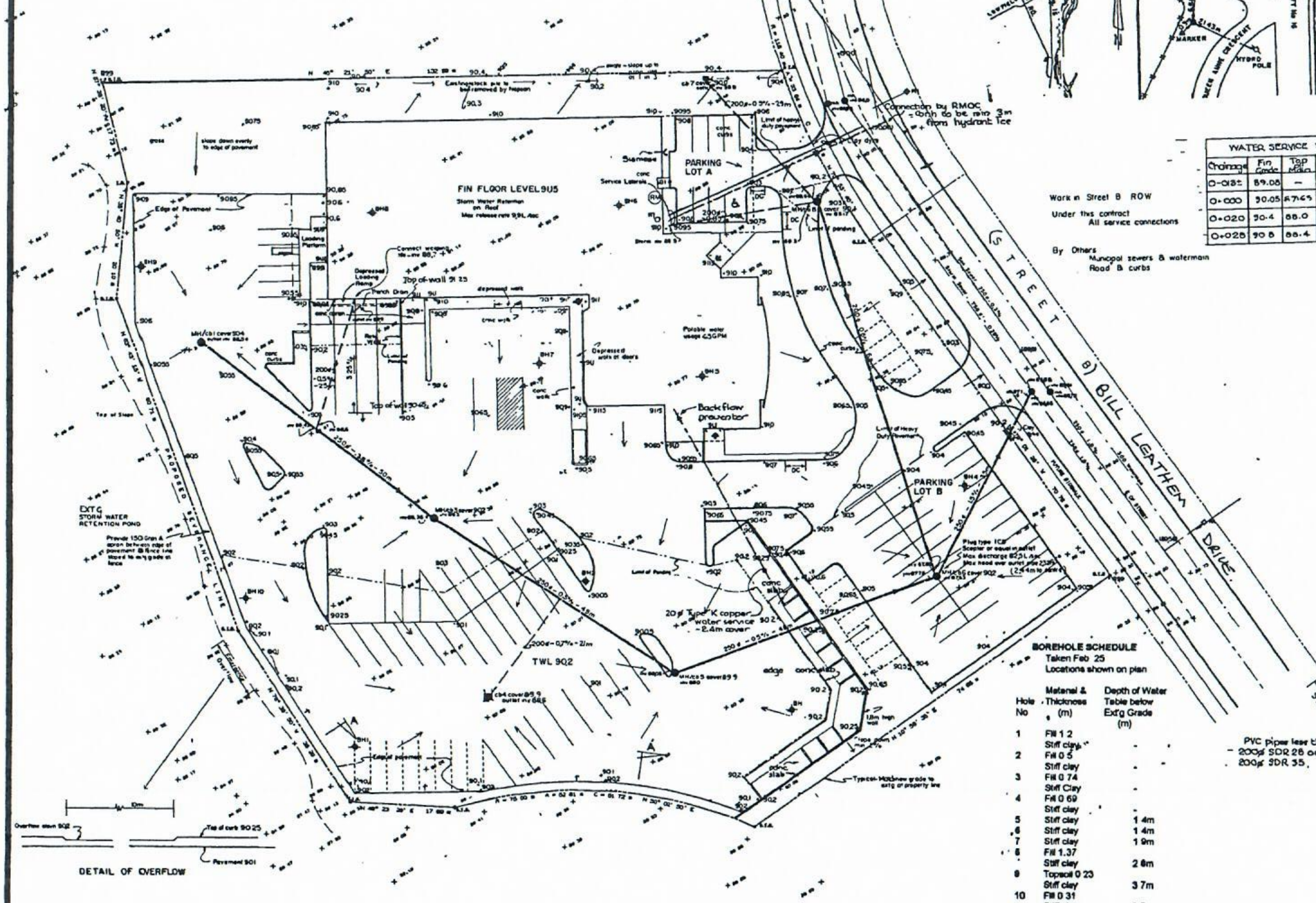
Cb lead & storm lateral

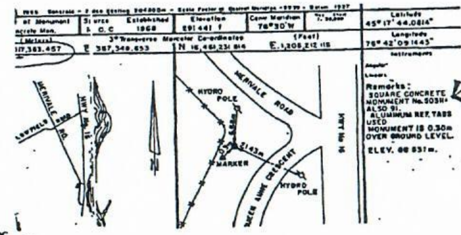
Storm Sewers



ROAD CONSTRUCTION DETAIL

CONC WALK DETAIL



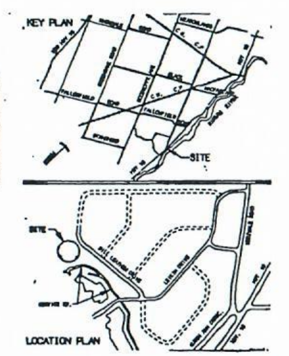


WATER SERVICE SCHEDULE			
Chainage	Fin Grade	Top of Main	Fitting
0-018±	89.08	—	Conn. to main
0+000	90.05	87.65	Property Line Valve & Box
0+020	90.4	88.0	
0+028	90.8	88.4	End service

Work in Street B ROW

Under this contract
All service connections

By Others
Municipal sewers & watermain
Road & curbs



KEY PLAN

LOCATION PLAN

BOREHOLE SCHEDULE
Taken Feb 25
Locations shown on plan

Hole No	Material & Thickness (m)	Depth of Water Table below Ext'g Grade (m)
1	Fill 1 2	
	Stiff clay	-
2	Fill 0 5	
	Stiff clay	-
3	Fill 0 74	
	Stiff Clay	-
4	Fill 0 69	
	Stiff clay	-
5	Stiff clay	1 4m
6	Stiff clay	1 4m
7	Stiff clay	1 9m
8	Fill 1.37	
	Stiff clay	2 6m
9	Topsoil 0 23	
	Stiff clay	3 7m
10	Fill 0 31	
	Stiff clay	3.0m

PVC pipes less than 200ø SDR 28 over 200ø SDR 35.

Tender to include cost of all municipal & RMOC permits required to carry out the construction.
Location of utilities is not known. These must be located by the contractor & if there is any conflict with these works he shall notify the engineer before commencing work.
For setting out, see architectural drawings.
Inspect site before submitting tender & allow for all site originated construction problems.
No building construction shall be commenced until the location and elevation of the existing sewers has been confirmed
It is the contractor's responsibility to inform the engineer of his schedule so that inspections can be made
All granular material both for services & pavement shall be compacted to 95% Standard Proctor & an approved Soils Engineer shall be employed at the Contractor's expense to confirm the compaction

SEWERS & WATERMAINS

Sewers & laterals to be constructed of PVC pipes, plain or Ultra-rib with watertight joints. Laterals to stop 1m from building with watertight caps.
Bed pipes & laterals on 150 Gran A. Backfill to 300 above pipes with Gran. B material before backfilling with excavated material. All sewer construction to be to municipal standards & to their satisfaction.
Storm manhole catchbasins to be to OPSD 701 01 with 600 deep sumps & hinged covers to OPSD 400 02.
Catchbasins shall be 600 square with 600 deep sumps & hinged covers to OPSD 400.02 ... NS400 covers.
Backfill excavation for manholes & catchbasins with Gran. B, Type 1.
Water service to be to RMOC standards.
Water meters to be installed in accordance with RMOC Spec. WSD30, 31 or 32.

DRIVEWAYS & PARKING

All materials, construction procedures, tolerances, etc., to be in accordance with MTC standards & specifications.
Concrete used in curbs shall be 30 MPa, max. 19mm aggregate, 5-7% entrained air & max. 75mm slump. Wood float finish.
Provide contraction joints at 2m c/c with 12mm bituminous expansion joint every 6m
Mechanically saw cut asphalt for road cuts & new curb. Reinstate to match existing and to City requirements.
Excavate for roadworks to provide full depth of base course materials. Clean off all loose material before placing granular. If there are any soft areas in the subgrade, the engineer shall be notified to assess it and instruct on rectification required. If the engineer does not inspect the subgrade, the contractor accepts responsibility.
Finished pavement surfaces shall grade evenly between the proposed finished grades shown on the drawing
The contractor shall provide to the engineer marked up, as-built drawings of both roadworks and underground services.
Type K 20ø water service to be brought up to 500 above floor slab at each end.

Regional Municipality of Ottawa-Carleton Environmental Services Department / Municipalité régionale d'Ottawa-Carleton Services environnementaux
Approved
Date 23/08/96
WATER WORKS

client	PYE & RICHARDS
project	CONSUMERS GAS WESTEND OPS CENTRE
	SOUTH MERIVALE BUSINESS PARK STREET B
dwg description	GRADING PAVING SEWERS & WATER SERVICES PLAN

SPENCER & ASSOCIATES CONSULTING ENGINEERS LTD.
3852 RICHMOND ROAD, OTTAWA 828-5547

drn by	A L	scale	1:400
chk'd by		date	APR 95
trcd by			
project no	529		
dwg no	106	rev	E.

REVISIONS

No		Date
A	Various changes	June 95
B	Issued for Tender	23 June 95
C	Some paving and curbs omitted	July 95
D	Changed for RMOC	July 95
E	Meter moved, backflow preventer added	Aug 95

NOTES
Proof roll subgrade before placing gran B
Provide straw bale check dams around manhole & catchbasins until roadworks complete

4796

8829

PROPOSED

TWO STOREY COMMERCIAL WAREHOUSE AND OFFICE

BUILDING SITE

PART OF LOT 18

CONCESSION 1 (RIDEAU FRONT)

GEOGRAPHIC TOWNSHIP OF NEPEAN

96 BILL LEATHEM DRIVE

CITY OF OTTAWA

APPENDIX D

CITY OF OTTAWA

- ELEVATION CONTOURS (FIGURE 1)
- SITE SURVEY PLAN
- SITE PLAN
- FUS FIRE FLOW CALCULATION
- FUS EXPOSURE DISTANCES (FIGURE 2)
- WATER BOUNDARY CONDITIONS
- SUPPORTING HYDRAULIC CALCULATIONS
- HYDRANT SPACING (FIGURE 3)

ATTACHMENT 1: FIGURE 1 – ELEVATION CONTOURS

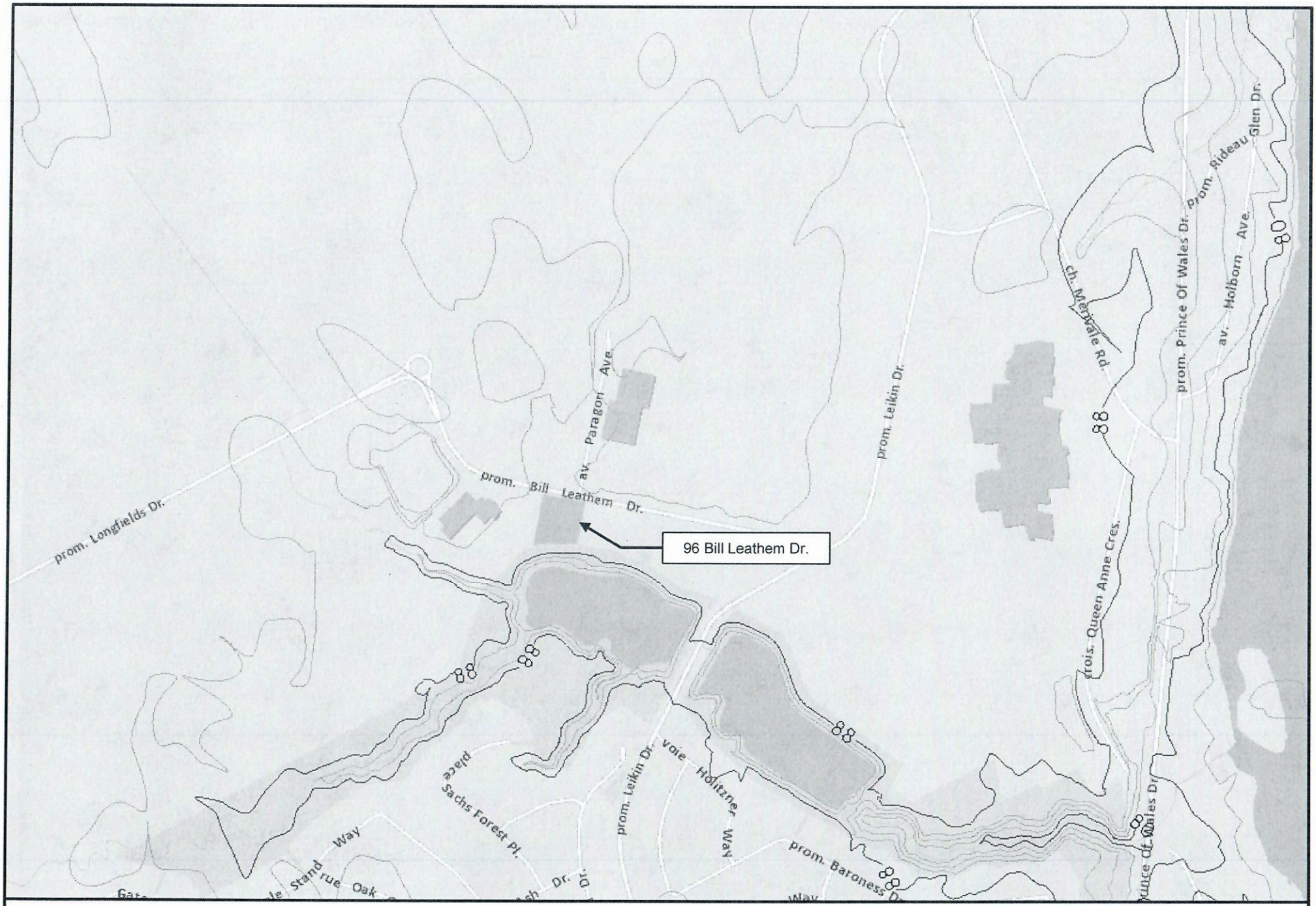
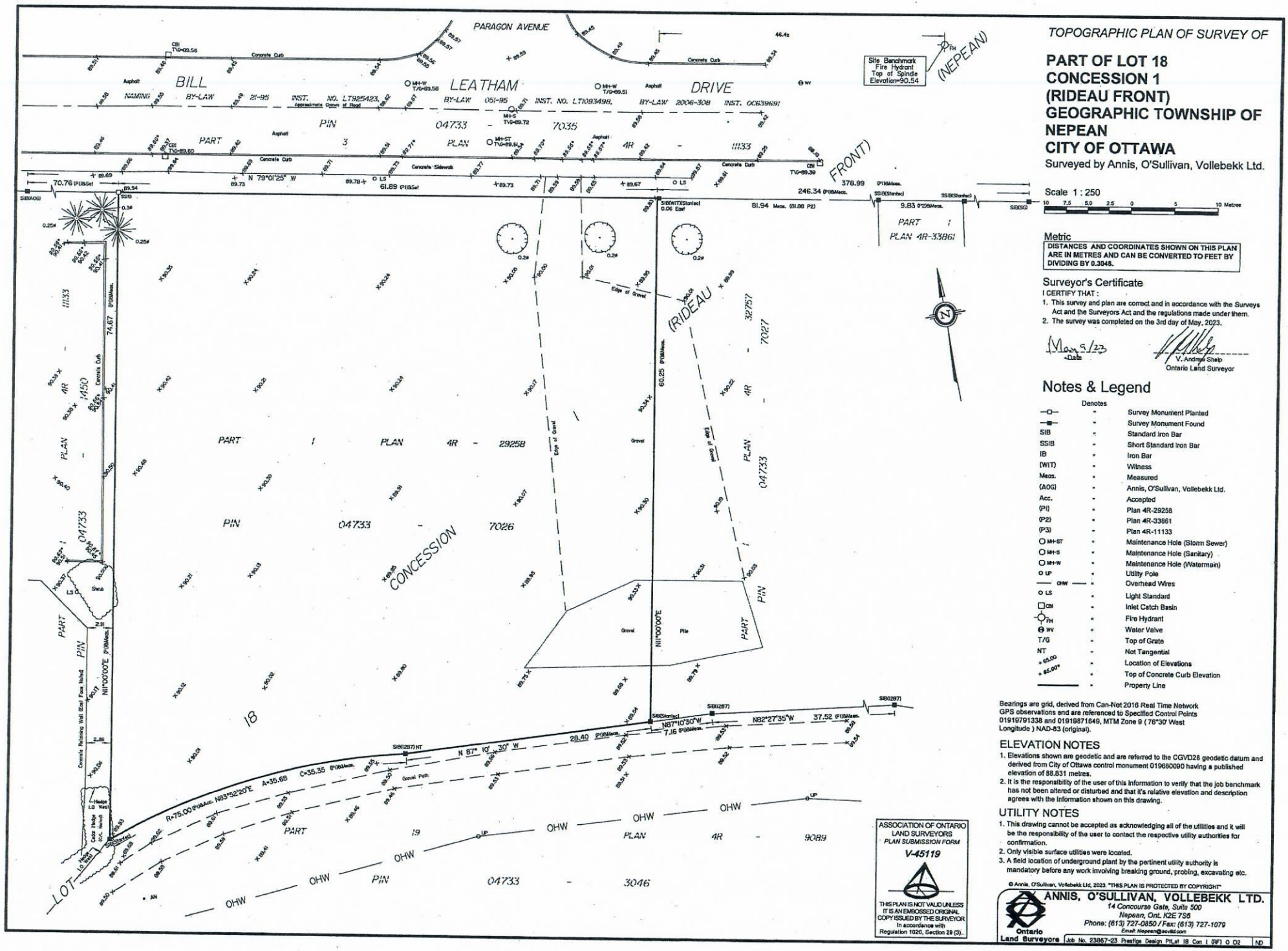


Figure 1: Elevation Contours

Source: geoOttawa 2023; *Contains information licensed under the Open Government Licence – City of Ottawa.*

ATTACHMENT 2: SITE SURVEY PLAN



TOPOGRAPHIC PLAN OF SURVEY OF

PART OF LOT 18 CONCESSION 1 (RIDEAU FRONT) GEOGRAPHIC TOWNSHIP OF NEPEAN CITY OF OTTAWA

Surveyed by Annis, O'Sullivan, Vollebekk Ltd.

Metric

DISTANCES AND COORDINATES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

Surveyor's Certificate

I CERTIFY THAT :

1. This survey and plan are correct and in accordance with the Surveys Act and the Surveyors Act and the regulations made under them.
2. The survey was completed on the 3rd day of May, 2023.

May 5/23
Date

V. Andrew Sheip
Ontario Land Surveyor

Notes & Legend

		Denotes
—○—	-	Survey Monument Planted
—■—	-	Survey Monument Found
SIB	-	Standard Iron Bar
SSIB	-	Short Standard Iron Bar
IB	-	Iron Bar
(WIT)	-	Witness
Meas.	-	Measured
(AOG)	-	Annis, O'Sullivan, Vollebekk Ltd.
Acc.	-	Accepted
(P1)	-	Plan 4R-29258
(P2)	-	Plan 4R-33861
(P3)	-	Plan 4R-11133
MH-ST	-	Maintenance Hole (Storm Sewer)
MH-S	-	Maintenance Hole (Sanitary)
MH-W	-	Maintenance Hole (Watermain)
UP	-	Utility Pole
OHW	-	Overhead Wires
LS	-	Light Standard
CBI	-	Inlet Catch Basin
FH	-	Fire Hydrant
WV	-	Water Valve
T/G	-	Top of Grate
NT	-	Not Tangential
+65.00	-	Location of Elevations
+65.00*	-	Top of Concrete Curb Elevation
	-	Property Line

Bearings are grid, derived from Can-Net 2016 Real Time Network GPS observations and are referenced to Specified Control Points 01919791338 and 01919871649, MTM Zone 9 (76°30' West Longitude) NAD-83 (original).

ELEVATION NOTES

1. Elevations shown are geodetic and are referred to the CGVD28 geodetic datum and derived from City of Ottawa control monument 019680090 having a published elevation of 88.831 metres.
2. It is the responsibility of the user of this information to verify that the job benchmark has not been altered or disturbed and that it's relative elevation and description agrees with the information shown on this drawing.

UTILITY NOTES

1. This drawing cannot be accepted as acknowledging all of the utilities and it will be the responsibility of the user to contact the respective utility authorities for confirmation.
2. Only visible surface utilities were located.
3. A field location of underground plant by the pertinent utility authority is mandatory before any work involving breaking ground, probing, excavating etc.

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
V-45119

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29 (3).

ANNIS, O'SULLIVAN, VOLLEBEKK LTD.
14 Concourse Gate, Suite 500
Nepean, Ont. K2E 7S6
Phone: (613) 727-0850 / Fax: (613) 727-1079
Email: Nepean@aovltd.com
Ontario Land Surveyors

Job No. 23867-23 Prestige Design Plt_at 18 Con 1 (RF) O D2 ND

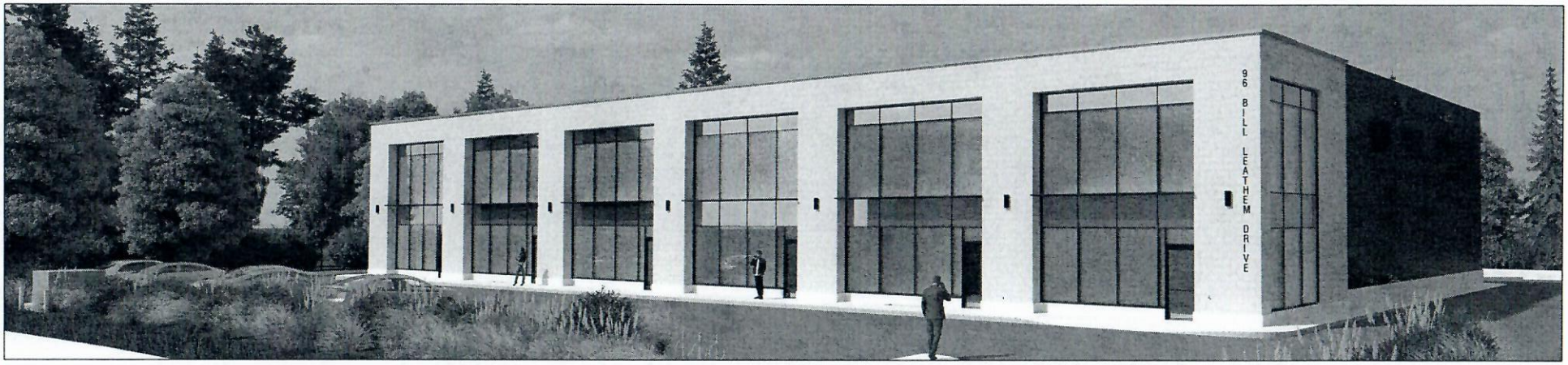
ATTACHMENT 3: SITE PLAN

ISSUED FOR: ISSUED FOR SPA REVISION: 1 Jan 29-2024

1-STOREY OFFICE + WAREHOUSE

96 BILL LEATHAM DRIVE
OTTAWA ONTARIO

KWCarchitects
383 Parkdale Avenue, Suite 201, Ottawa, ON, K1Y 4R4
Tel: 613 239-2117 www.kwc-arch.com



ARCHITECT:
KWC Architects Inc.
383 Parkdale Avenue, Suite 201
Ottawa, ON., K1Y 4R4
Tel: 613 239-2117
Fax: 613 239-6505
Cell: –
Email: –

REGISTERED OWNER:
Chello Building Corp.
50 Cannabi Dr.
Ottawa ON K2G 5X8
Tel: 613 224-9437
Fax: –
Cell: –
Email: –

MECHANICAL ENGINEER:
Organization Name
123 Street St.
Ottawa, ON., A1A 1A1
Tel: 613 555-1234
Fax: 613 555-1234
Cell: 613 555-1234
Email: address@email.com

STRUCTURAL ENGINEER:
D+M Structural Ltd.
333 Preston St.
Ottawa, ON., K1S 5N4
Tel: 613 651-9480

ELECTRICAL ENGINEER:
Organization Name
123 Street St.
Ottawa, ON., A1A 1A1
Tel: 613 555-1234
Fax: 613 555-1234
Cell: 613 555-1234
Email: address@email.com

Chello Building Corp Consultants

CIVIL ENGINEER & GRADING:
T.L Mark Engineering Consultants Ltd.
1455 Youville Dr.
Ottawa, ON., K1C 6Z7
Tel: –
Fax: –
Cell: 613 837-6516
Email: TLMarkOCE@hotmail.com

GEOTECHNICAL ENGINEER & PHASE 1 ENVIRONMENTAL:
Paterson Group
9 Auriga Dr.
Ottawa, ON., K2E 7T9
Tel: 613 226-7381 ext. 253
Fax: –
Cell: 343 997-1181
Email: JVilleneuve@patersongroup.ca

LANDSCAPE ARCHITECT:
GJA Inc.
110 Didsbury Rd.
Ottawa, ON., K2T 0C2
Tel: 613 862-1943
Fax: –
Cell: –
Email: gma@gjaia.com

SURVEYOR:
Annis, O'Sullivan, Vollebekk Ltd.
14 Cacoouna Gate, Suite 500
Nepean, Ontario, K2E 7S6
Tel. 613 727-4352 ext. 226
Fax: –
Cell: –
Email: andys@aovltd.com

Environmental Impact study & Tree Conservation:
Muncaster Environmental Planning Inc.
123 Street St.
Ottawa, ON., A1A 1A1
Tel: –
Fax: –
Cell: 613 749-3753
Email: bmuncaster@rogers.com

ARCHITECTURAL CONTRACT DOCUMENTS

A000	REV 1	COVER SHEET
A010	REV 1	SITE PLAN
A011	REV 1	COLOUR BUILDING REFERENCE ELEVATIONS

STRUCTURAL CONTRACT DOCUMENTS

S001 STRUCTURAL PLACEHOLDER

MECHANICAL CONTRACT DOCUMENTS

M001 MECHANICAL PLACEHOLDER

ELECTRICAL CONTRACT DOCUMENTS

E001 ELECTRICAL PLACEHOLDER

CIVIL CONTRACT DOCUMENTS

C001 CIVIL PLACEHOLDER

SURVEYOR CONTRACT DOCUMENTS

V001 SURVEYOR PLACEHOLDER

LANDSCAPE CONTRACT DOCUMENTS

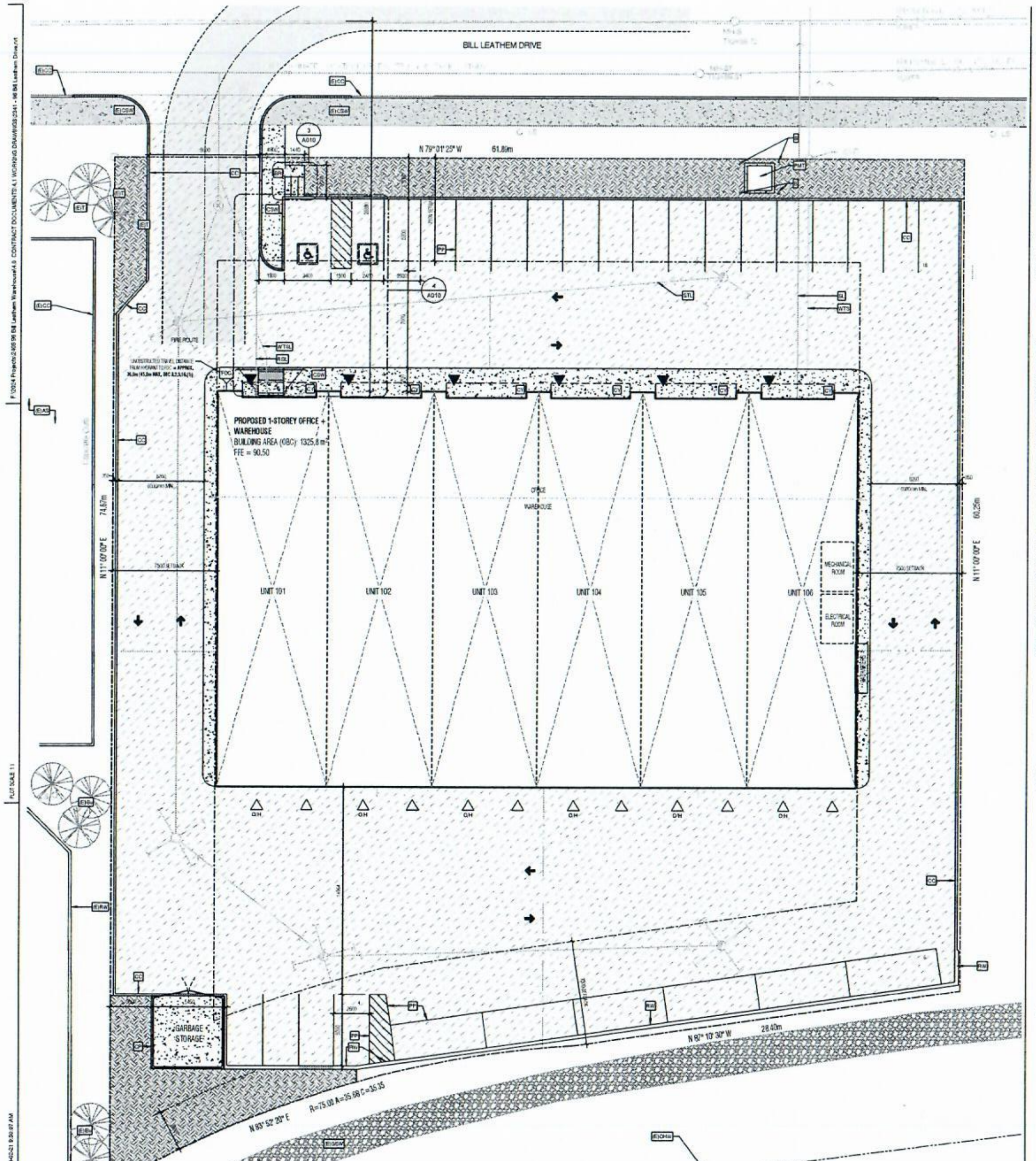
L001 LANDSCAPE PLACEHOLDER

P:\2024 Projects\2405 96 Bill Leatham Warehouse\4.0 CONTRACT DOCUMENTS\4.1 WORKING DRAWINGS\2405 - 96 Bill Leatham Drive.vwx

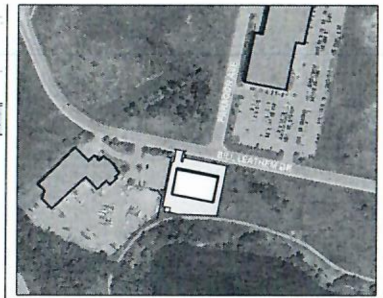
PLOT SCALE 1:1

PLOT DATE 2024-01-29 9:56:08 AM

SHEET SIZE ARCH D (24" x 36" (610.00 x 914.00mm)



1 SITE PLAN
A010 SCALE: 1 : 150



2 LOCATION PLAN
A010 SCALE: 1 : 2500

SITE PLAN NOTES

NOTE#	NOTE
(E)AS	Existing Asphalt Surface - Refer to Survey
(E)Bu	Existing Bushes - Refer to Survey
(E)CC	Existing Concrete Curb - Refer to Survey
(E)CSW	Existing Concrete Sidewalk - Refer to Survey
(E)GSW	Existing Gravel Sidewalk - Refer to Survey
(E)OHW	Existing Overhead Utility Wires - Refer to Survey
(E)RW	Existing Retaining Wall - Refer to Survey
(E)T	Existing Tree - Refer to Survey
B	Bollard, 6mm x 135mm dia. x 1050mm painted galvanized steel bollard c/w welded cap and 6mm x 150mm base plate with 4 bolt holes, secure to pavement or sidewalk at locations indicated with 16mm dia. galvanized concrete or asphalt anchors dependant on location.
BFPS	Provide vertically-mounted sign, minimum 300mm wide x 600mm high, marked with International Symbol of Accessibility. Mount not less than 1500mm above grade and not more than 2000mm above grade. Ensure tonal contrast between BF Parking Sign and background environment. Provide information text compliant with City of Ottawa By Law requirements. Provide additional building signage that identifies Type "A" spaces as "VAN ACCESSIBLE / FOURGONNETTE ACCESSIBLE".
BR	Bike Rack - Refer to Landscape
CC	Concrete Curb - Refer to Civil
CP	Concrete Pad - Refer to Civil
CSW	Concrete Sidewalk - Refer to Civil
CY	Canopy c/w Recessed Pot Lights - Refer to Electrical
PMT	Pad Mount Transformer - Refer to Civil
PP	Painted Parking Lines, Typ. - Refer to Civil
RSL	Roof Storm Line - Refer to Civil
RW	Retaining Wall - Refer to Civil
SL	Sanitary Line - Refer to Civil
STL	Storm Line - Refer to Civil
TWSI	Tactile Walking Surface Indicator (TWSI), Full Width of curb ramp, Recessed to be flush with concrete walking surface - Refer to Civil
WTS	Water Service - Refer to Civil
WTSL	Weeping Tile Storm Line - Refer to Civil

SITE PLAN SYMBOLS

ICON	DESCRIPTION
	Existing Buildings
	Proposed Buildings
	Property Lines
	Setback Lines
	Overhead Wires
	Fence
	Road Lanes
	Proposed Concrete Curb
	Depressed Concrete Curb
	Existing Concrete Pad/Sidewalk
	Proposed Concrete Pad/Sidewalk
	Proposed Asphalt Driving Surface
	Sawcut Asphalt
	Soft Landscaping
	Existing Landscape Area
	Proposed Landscape Area
	Barrier Free Parking Space
	Exterior Bicycle Parking Spot with Bollard Style Bike Rack
	Two Way Vehicle Circulation
	Principal Entrance Door
	Exterior Door ("OH" indicates Overhead Door)
	Exterior 6m Wide Fire Route (12m centerline radius on all turns, TYP.)

PROPERTY LEGAL DESCRIPTION

PART 1
PLAN 4R-29258
LOT 18
CONCESSION 1
GEOGRAPHIC TOWNSHIP OF NEPEAN, CITY OF OTTAWA
PIN 04733 - 7026.

CITY OF OTTAWA
Prepared by Annis, O'Sullivan, Vollebekk Ltd.
Plan dated May 2, 2023

PROJECT ZONING REVIEW STATISTICS

MUNICIPALITY:	CITY OF OTTAWA
MUNICIPAL ADDRESS:	96 BILL LEATHEM DRIVE
REGISTERED OWNER:	CHELLO BUILDING CORP
LOT AREA:	[illegible]
ZONING ANALYSIS	
OTTAWA	
ZONE:	IL3 [illegible]
PROPOSED USE:	1 STOREY OFFICE + WAREHOUSE

BUILDING AREAS

	GROSS FLOOR AREA sq. m.	sq. ft.
BUILDING FOOTPRINT	1317.0m²	14176.0 sq. ft.
GROUND FLOOR GROSS AREA	1277.0m²	13745.8 sq. ft.
TOTAL GROSS FLOOR AREA	1277.0m²	13745.8 sq. ft.

DEVELOPMENT STANDARDS

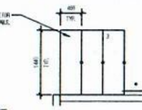
	REQUIRED	PROPOSED
BUILDING HEIGHT	22.0m MAX.	13m
FRONT YARD SETBACK	7.5m MIN.	7.5m
CORNER SIDE YARD SETBACK	7.5m MIN.	N/A
REAR YARD SETBACK	7.5m MIN.	7.5m
INTERIOR SIDE YARD SETBACK	7.5m MIN.	7.5m
STOREYS ABOVE GRADE	-	1
MINIMUM WIDTH OF LANDSCAPED AREA AROUND A PARKING LOT	NO MINIMUM	-
MINIMUM WIDTH OF LANDSCAPED AREA	ABUTTING A STREET = 3.0M	3.0M

PARKING SPACES

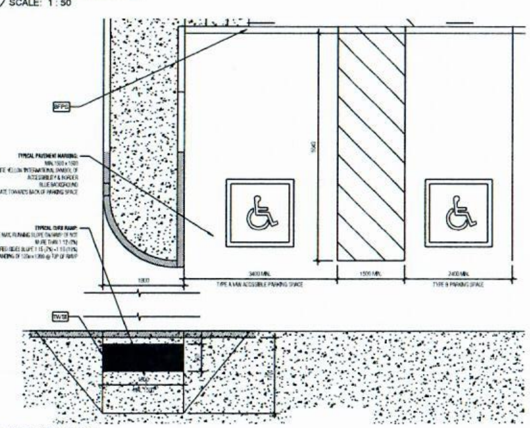
	REQUIRED	PROPOSED
VEHICULAR PARKING SPACES AREA "C" (TABLE 101 - N69 AND N95)	OFFICE (N45): [illegible] = 9.8 SPACES WAREHOUSE (N95): [illegible] = 7.0 SPACES	19 SPACES
ACCESSIBLE VEHICULAR PARKING SPACES	1 SPACES (1 TYPE B)	2 SPACES (1 TYPE A + 1 TYPE B)
TOTAL GROSS FLOOR AREA	18 SPACES	19 SPACES

BICYCLE PARKING

	REQUIRED	PROPOSED
BICYCLE PARKING SPACES (TABLE 111A (e))	1 PER 250M² FOR OFFICE/2000M² FOR WAREHOUSE OF GFA	3 SPACES
TOTAL GROSS FLOOR AREA	3 SPACES	3 SPACES



3 BICYCLE PARKING LAYOUT
A010 SCALE: 1 : 50



4 BF PARKING DETAIL
A010 SCALE: 1 : 50

NOTES
Contractor shall check and verify all dimensions on site and report any discrepancies to the Architect before proceeding.

ISSUED

no.	revision	date
1	ISSUED FOR SPA	Oct 31 2023

north point

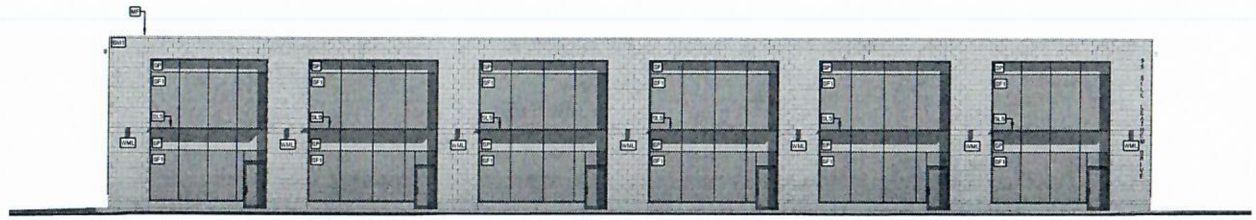
383 Parkdale Avenue, Suite 201
Ottawa, Ontario, Canada, K1Y 4R4
KWC ARCHITECTS INC.
PHONE 613 236-2217
FAX 613 236-0595
EMAIL kwc@kwc-arch.com

1-STOREY OFFICE + WAREHOUSE
96 BILL LEATHAM DRIVE, OTTAWA, ONTARIO

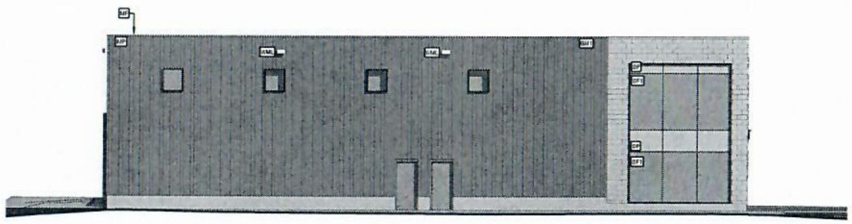
designed by	MM/CM	approved by	MM
drawn by	CM	project no.	2341
date	Jan 29-2024	scale	as noted

SITE PLAN

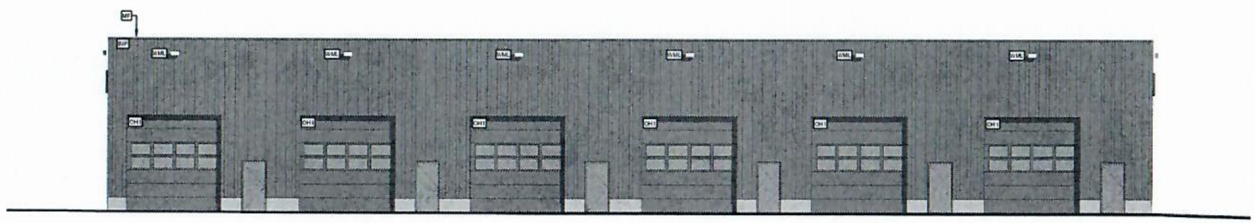
1 A010



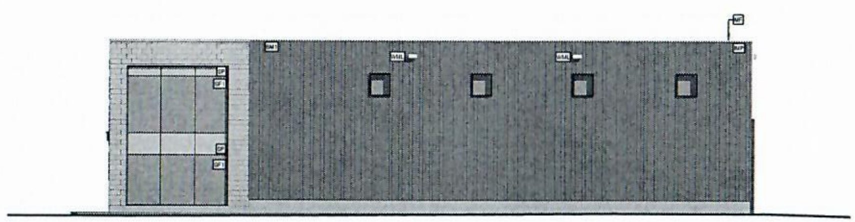
1 NORTH ELEVATION
A011 SCALE: 1 : 100



2 EAST ELEVATION
A011 SCALE: 1 : 100



3 SOUTH ELEVATION
A011 SCALE: 1 : 100



4 WEST ELEVATION
A011 SCALE: 1 : 100

ELEVATION NOTES

NOTE#	NOTE
BM1	Masonry Large Size - Biege/Grey Colour
IMP	Insulated Metal Panel, Dark Grey
MF	Metal Cap Flashing. Colour to Match Canopy Pre-Fin Metal Flashing
OH1	Solid, Prefinished, Insulated Overhead Door, weather seal. 4266mm W x 4266mm H
SF1	Aluminum Storefront c/w Clear Glass
SLS	Solar Shade
SP	Spandrel Panel c/w Clear Glass
WML	Wall Mounted Downward Light Fixture

NOTES

Contractor shall check and verify all dimensions on site and report any discrepancies to the Architect before proceeding.

ISSUED

no.	revision	date
1	ISSUED FOR SPA	Oct 31-2023

383 Parkdale Avenue, Suite 201
Ottawa, Ontario, Canada, K1Y 4R4

KWC ARCHITECTS INC.

PHONE 613 238-2217
FAX 613 238-6595
EMAIL kwc@kwc-arch.com

detail no. / no. de detail: 1
sheet no. / no. de la feuille: A101

projet / projet

1-STOREY OFFICE + WAREHOUSE

96 BILL LEATHAM DRIVE, OTTAWA, ONTARIO

designed by	MM/CM	approved by	MM
drawn by	CM	project no.	2341
date	Jan 29-2024	scale	as noted

drawing / dessin

COLOUR BUILDING REFERENCE ELEVATIONS

revision: 1 sheet no.: A011

PLOT DATE 2024-02-21 9:20:19 AM
SHEET SIZE: ARCH D 24" x 36" (610.00 x 914.00mm)

ATTACHMENT 4: FUS FIRE FLOW CALCULATION

Stantec

FUS Fire Flow Calculation - Long Method

Calculations based on: *"Water Supply for Public Fire Protection"* by Fire Underwriters' Survey, 2020

Stantec Project #: 163401084
Project Name: Potable Water Hydraulic Analysis- 96 Bill Leathem Dr
Fire Flow Calculation #: 1
Date: July 11, 2023
Building Type/Description/Name: Commercial
Data inputted by: Hamidreza Mohabbat, M.Sc
Data reviewed by: Alexandre Mineault-Guitard P.Eng

Notes: *Non-combustible construction (concrete + steel frame); 2 storeys more than 50% above grade. Building Footprint of 1326 m2. Sprinklered Building. Building setbacks per site plan (dated 2023/05).*

Fire Underwriters Survey Determination of Required Fire Flow - Long Method

Step	Task	Term	Options	Multiplier Associated with Option	Choose:	Value Used	Unit	Total Fire Flow (L/min)
		Framing Material						
1	Choose Frame Used for Construction of Unit	Coefficient related to type of construction (C)	Type V - Wood Frame	1.5	Type II - Non-combustible construction	0.8	m	
			Type IV-A - Mass Timber	0.8				
			Type IV-B - Mass Timber	0.9				
			Type IV-C - Mass Timber	1				
			Type IV-D - Mass Timber	1.5				
			Type III - Ordinary construction	1				
			Type II - Non-combustible construction	0.8				
			Type I - Fire resistive construction	0.6				
		Floor Space Area						
2	Choose Type of Housing (if TH, Enter Number of Units Per TH Block)	Type of Housing	Single Family	0	Other (Comm, Ind, Apt etc.)	1	Units	
			Townhouse - indicate # of units	0				
			Other (Comm, Ind, Apt etc.)	1				
2.2	# of Storeys	Number of Floors/Storeys in the Unit (do not include basement if 50% below grade):			2	2	Storeys	
3	Enter Ground Floor Area of One Unit	Average Floor Area (A) based on total floor area of all floors for one unit (non-fire resistive construction):			663	663	Area in Square Metres (m^2)	
					Square Metres (m2)			
3.1	Obtain Total Effective Building Area	Total Effective Building Area (# of Storeys x # of Units (if single family or townhouse) x Average Floor Area):			1,326	1326		
4	Obtain Required Fire Flow without Reductions	Required Fire Flow (without reductions or increases per FUS) ($F = 220 * C * \sqrt{A}$) Round to nearest 1,000 L/min						6,000
5	Apply Factors Affecting Burning	**Reductions/Increases Due to Factors Affecting Burning**						
5.1	Choose Combustibility of Building Contents	Occupancy Content Hazard Reduction or Surcharge	Non-combustible	-0.25	Rapid burning	0.25	N/A	7,500
			Limited combustible	-0.15				
			Combustible	0				
			Free burning	0.15				
			Rapid burning	0.25				
5.2	Choose Reduction Due to Presence of Sprinklers	Sprinkler Reduction	Adequate Sprinkler conforms to NFPA13	-0.3	Adequate Sprinkler conforms to NFPA13	-0.3	N/A	-2,250
			None	0				
		Water Supply Credit	Water supply is standard for sprinkler and fire dept. hose line	-0.1	Water supply is standard for sprinkler and fire dept. hose line	-0.1	N/A	-750
			Water supply is not standard or N/A	0				
		Sprinkler Supervision Credit	Sprinkler system is fully supervised	-0.1	Sprinkler not fully supervised or N/A	0	N/A	0
			Sprinkler not fully supervised or N/A	0				
5.3	Choose Presence of Sprinklers for Exposures within 30m	Sprinkler Conforms to NFPA13	Adequate sprinkler for exposures conforms to NFPA13		None for exposures	0	N/A	0
			None for exposures					
		Water Supply	Water supply is standard for sprinkler and fire dept. hose line of exposures		Water supply is not standard or N/A for exposures		N/A	
			Water supply is not standard or N/A for exposures					
		Sprinkler Supervision	Sprinkler system of exposures is fully supervised		Sprinkler not fully supervised or N/A for exposures		N/A	
			Sprinkler not fully supervised or N/A for exposures					
5.4	Choose Separation Distance Between Units	Exposure Distance Between Units	North Side	30.1m or greater	0	0.2	m	1,500
			East Side	30.1m or greater	0			
			West Side	3.1 to 10.0m	0.2			
			South Side	30.1m or greater	0			
6	Obtain Required Fire Flow, Duration & Volume	*Total Required Fire Flow, rounded to nearest 1,000 L/min, with max/min limits applied:*						6,000
		Total Required Fire Flow (above) in L/s:						100
		Required Duration of Fire Flow (hrs)						2.00
		Required Volume of Fire Flow (m^3)						720

ATTACHMENT 5: FIGURE 2 – FUS EXPOSURE DISTANCES

Figure 2: FUS Exposure Distances (Property Line to Adjacent Buildings)

Source: geoOttawa 2023; *Contains information licensed under the Open Government Licence – City of Ottawa.*

ATTACHMENT 6: WATER BOUNDARY CONDITIONS

Mohabbat, Hamidreza

From: TL MaK <tlmakecl@bellnet.ca>
Sent: Thursday, July 20, 2023 5:02 PM
To: Mineault-Guitard, Alexandre
Cc: Mohabbat, Hamidreza; Alemany, Kevin
Subject: FW: 96 Bill Leathem Drive - Water Boudary Conditions Request
Attachments: 96 Bill Leathem_Boundary Condition(20July2023).docx

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Alex,

Attached please find the City's water boundary conditions for your calculations that we received on July 20, 2023.

Please provide your calculation and letter report to us at your earliest convenience.

Thank You,

Tony Mak

T.L. Mak Engineering Consultants Ltd.
1455 Youville Drive, Suite 218
Ottawa, ON. K1C 6Z7
Tel. 613-837-5516 | Fax: 613-837-5277
E-mail: tlmakecl@bellnet.ca

From: Cassidy, Tyler [mailto:tyler.cassidy@ottawa.ca]
Sent: July 20, 2023 1:56 PM
To: TL MaK
Subject: RE: 96 Bill Leathem Drive - Water Boudary Conditions Request

Hi Tony,

Please find attached your request for boundary conditions for 96 Bill Leathem Drive.

Note that there is a planned pressure zone reconfiguration for this area. Please ensure your Site Servicing Report includes the hydraulic results for each pressure zone configuration. Feel free to reach out if you have any questions

Thank you,

Tyler Cassidy, P.Eng
Infrastructure Project Manager,
Planning, Real Estate and Economic Development Department / Direction générale de la planification, des biens immobiliers et du développement économique - South Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 12977, Tyler.Cassidy@ottawa.ca

From: TL MaK <tlmakecl@bellnet.ca>
Sent: July 11, 2023 2:57 PM
To: Cassidy, Tyler <tyler.cassidy@ottawa.ca>
Subject: 96 Bill Leathem Drive - Water Boudary Conditions Request

Hi Tyler,

Regarding this site, we are requesting for water boundary conditions from the City of Ottawa to be provided for our hydraulic analysis. The particulars are as follows:

The proposed commercial building located within the Pressure Zone 2W at 96 Bill Leathem Drive is a 2-storey commercial building with no basement. The building has a footprint of 1,325.8 m^2 and contains 2 stories of office space with a total gross floor area of 752 m^2. The building also has a warehouse with a total gross floor area 892 m^2. The building is to be serviced by the 305 mm diameter watermain along Bill Leathem Dr.

The demands were calculated using the City of Ottawa's Water Design Guidelines, where the consumption rate of 28,000 L/gross ha/d was used to estimate average day demands (AVDY). Maximum day (MXDY) demands were calculated by multiplying AVDY demands by a factor of 1.5. Peak hour (PKHR) demands were calculated by multiplying MXDY by a factor of 1.8.

Table 1: Estimated Domestic Demand

Unit Type	Area (ha)	Consumption (L/gross ha/d)	AVDY		MXDY		PKHR	
			L/d	L/s	L/d	L/s	L/d	L/s
Commercial	0.164	28,000	4,604	0.05	6,906	0.08	12,432	0.14
Total	***0.164***		***4,604***	***0.05***	***6,906***	***0.08***	***12,432***	***0.14***

The fire flow required was determined following the Fire Underwriter Survey (FUS) method and is provided in the attached worksheet. For this analysis, the building was classified as a non-combustible construction (assuming that all structural elements such as walls, floors and roof are constructed with a minimum 1-hour fire-resistance rating and non-combustible material). Furthermore, the building content was assumed as rapid burning, as a conservative approach depending on the intended use of the warehouse. Lastly, it is understood that the building will have a sprinkler system. The resulting total required fire flow is 6,000 L/min (100 L/s) for a duration of 2 hours.

In summary:

- AVDY = 4,604 L/d (0.05 L/s);
- MXDY = 6,906 L/d (0.08 L/s);
- PKHR = 12,432 L/d (0.14 L/s); and,
- Fire Flow = 6,000 L/min (100 L/s).

The City is requested to provide boundary conditions for the Average Day, Maximum Day, Peak Hour and Fire Flow conditions indicated above.

Thank you for your prompt attention to this matter. Please forward the boundary conditions as soon as possible.

Have a good day.

Regards,

Tony Mak

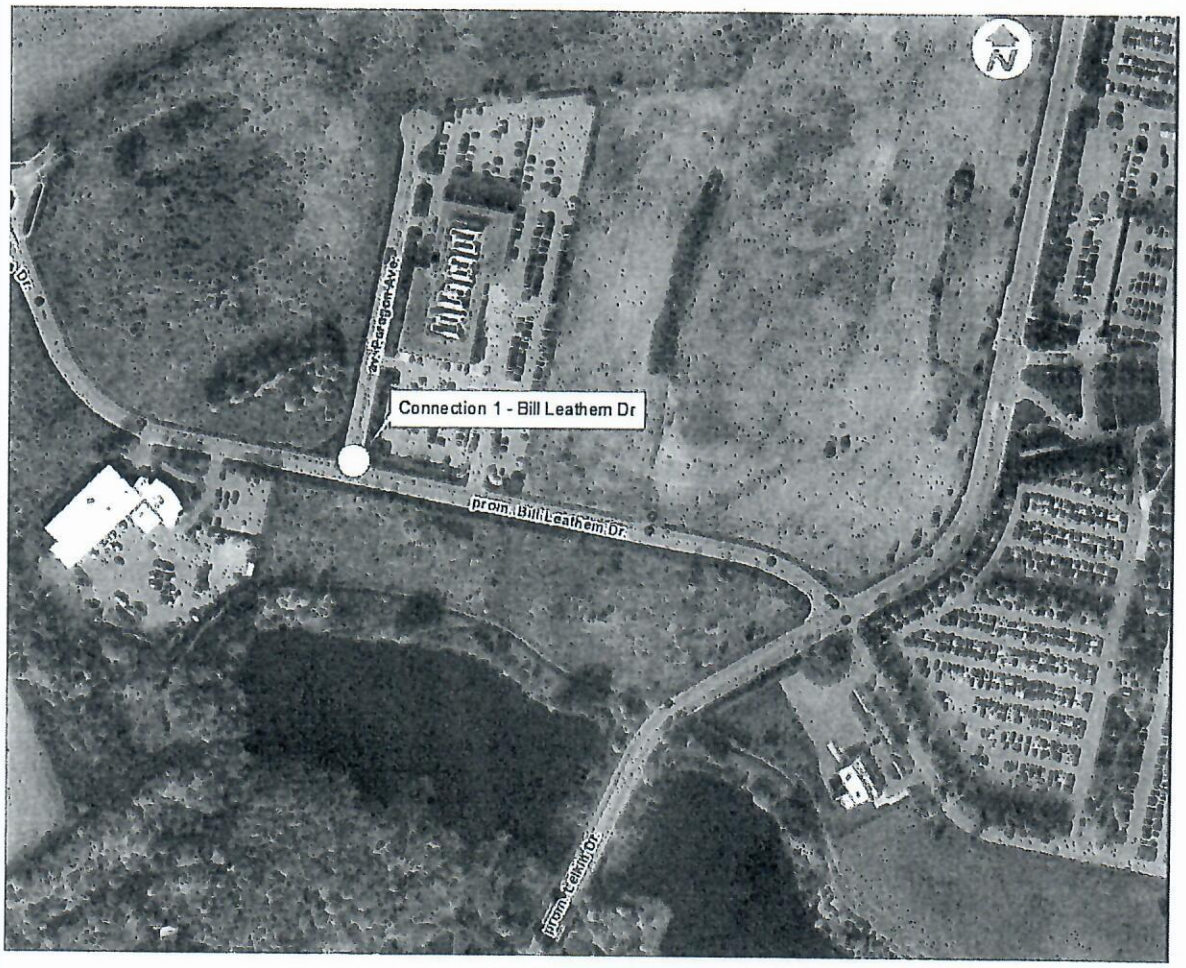
T.L. Mak Engineering Consultants Ltd.
1455 Youville Drive, Suite 218
Ottawa, ON. K1C 6Z7
Tel. 613-837-5516 | Fax: 613-837-5277
E-mail: tlmakecl@bellnet.ca

Boundary Conditions
96 Bill Leathem

Provided Information

Scenario	Demand	
	L/min	L/s
Average Daily Demand	3.0	0.05
Maximum Daily Demand	4.8	0.08
Peak Hour	8.4	0.14
Fire Flow Demand #1	6,000	100.0

Location



Results

Connection 1 - 96 Bill Leathem (Existing Conditions – Pressure Zone 2W2C)

Demand Scenario	Head (m)	Pressure (psi)
Maximum HGL	132.8	61.3
Peak Hour	125.0	50.3
Max Day plus Fire Flow	126.5	52.3
[1] Ground Elevation =	89.7	m

Connection 1 - 96 Bill Leathem (Future Conditions – Pressure Zone SUC)

Demand Scenario	Head (m)	Pressure (psi)
Maximum HGL	146.9	81.4
Peak Hour	144.1	77.4
Max Day plus Fire Flow	142.8	75.5
[1] Ground Elevation =	89.7	m

Notes

1. As per the Ontario Building Code in areas that may be occupied, the static pressure at any fixture shall not exceed 552 kPa (80 psi.) Pressure control measures to be considered are as follows, in order of preference:
    a. If possible, systems to be designed to residual pressures of 345 to 552 kPa (50 to 80 psi) in all occupied areas outside of the public right-of-way without special pressure control equipment.
    b. Pressure reducing valves to be installed immediately downstream of the isolation valve in the home/ building, located downstream of the meter so it is owner maintained.

Disclaimer

The boundary condition information is based on current operation of the city water distribution system. The computer model simulation is based on the best information available at the time. The operation of the water distribution system can change on a regular basis, resulting in a variation in boundary conditions. The physical properties of watermains deteriorate over time, as such must be assumed in the absence of actual field test data. The variation in physical watermain properties can therefore alter the results of the computer model simulation. Fire Flow analysis is a reflection of available flow in the watermain; there may be additional restrictions that occur between the watermain and the hydrant that the model cannot take into account.

ATTACHMENT 7: SUPPORTING HYDRAULIC CALCULATIONS

Stantec

Supporting Hydraulic Calculations

Stantec Project #: 163401084
Project Name: 96 Bill Leathem Dr.
Date: July 27, 2023
Data inputted by: Hamidreza Mohabbat MASc.
Data reviewed by: Alexandre Mineault-Guitard, P.Eng.

Boundary Conditions provided by the City (Pressure Zone 2W2C):

Scenario 1: Peak Hour (Min HGL): 125.0 m;
Scenario 2: Average Day (Max HGL): 132.8 m; and
Scenario 3: Maximum Day plus Fire Flow: 126.5 m.

Sample Calculations

$HGL\ (m) = hp + hz$ *(1)*

where: hp = Pressure Head (m); and hz = Elevation Head (m), estimated from topography.

For Scenario 1, we have:

HGL(m) = 125 and hz (m) = 89.7.

Rearranging Equation 1, we can calculate the Pressure Head (hp) as follow:

$hp\ (m) = HGL - hz$

$\therefore$ hp = 125.0 - 89.7 m = 35.3 m.

To convert from Pressure Head (m) to a pressure value (kPa), the following equation can be used:

$P\ (kPa) = (\rho * g * hp) / 1000$ *(2)*

where: ρ = density of water = 1000 kg/m^3; and g = gravitational acceleration = 9.81 m/s^2.

Using Equation 2, we can calculate the Pressure Head (hp) as follow:

P (kPa) = (1000 * 9.81 * 35.3) / 1000

$\therefore$ P = 346 kPa.

Considering that 1 kPa = 0.145 psi, the pressure under Scenario 1 is equal to:

P = 50 psi.

Applying the same procedures, the pressures under Scenario 2 and Scenario 3 are calculated as follows:
Scenario 2: P = 61 psi; and Scenario 3: P = 52 psi.

To summarize:

Scenario 1: Minimum Pressure under Peak Hour Demand: 346 kPa (50 psi)
Scenario 2: Maximum Pressure under Average Day Demand: 423 kPa (61 psi)
Scenario 3: Minimum Pressure under Maximum Day + Fire Flow Demand: 361 kPa (52 psi)

Stantec

Supporting Hydraulic Calculations

Stantec Project #: 163401084
Project Name: 96 Bill Leathem Dr.
Date: July 27, 2023
Data inputted by: Hamidreza Mohabbat MASc.
Data reviewed by: Alexandre Mineault-Guitard, P.Eng.

Boundary Conditions provided by the City (Pressure Zone SUC):

Scenario 1: Peak Hour (Min HGL): 144.1 m;
Scenario 2: Average Day (Max HGL): 146.9 m; and
Scenario 3: Maximum Day plus Fire Flow: 142.8 m.

Sample Calculations

$HGL\ (m) = hp + hz$ *(1)*

where: hp = Pressure Head (m); and hz = Elevation Head (m), estimated from topography.

For Scenario 1, we have:

HGL(m) = 144.1 and hz (m) = 89.7.

Rearranging Equation 1, we can calculate the Pressure Head (hp) as follow:

$hp\ (m) = HGL - hz$

$\therefore$ hp = 144.1 - 89.7 m = 54.4 m.

To convert from Pressure Head (m) to a pressure value (kPa), the following equation can be used:

$P\ (kPa) = (\rho * g * hp) / 1000$ *(2)*

where: ρ = density of water = 1000 kg/m^3; and g = gravitational acceleration = 9.81 m/s^2.

Using Equation 2, we can calculate the Pressure Head (hp) as follow:

P (kPa) = (1000 * 9.81 * 54.4) / 1000

$\therefore$ P = 533 kPa.

Considering that 1 kPa = 0.145 psi, the pressure under Scenario 1 is equal to:

P = 77 psi.

Applying the same procedures, the pressures under Scenario 2 and Scenario 3 are calculated as follows:
Scenario 2: P = 81 psi; and Scenario 3: P = 76 psi.

To summarize:

Scenario 1: Minimum Pressure under Peak Hour Demand: 533 kPa (77 psi)
Scenario 2: Maximum Pressure under Average Day Demand: 561 kPa (81 psi)
Scenario 3: Minimum Pressure under Maximum Day + Fire Flow Demand: 521 kPa (76 psi)

ATTACHMENT 8: FIGURE 3 – HYDRANT SPACING

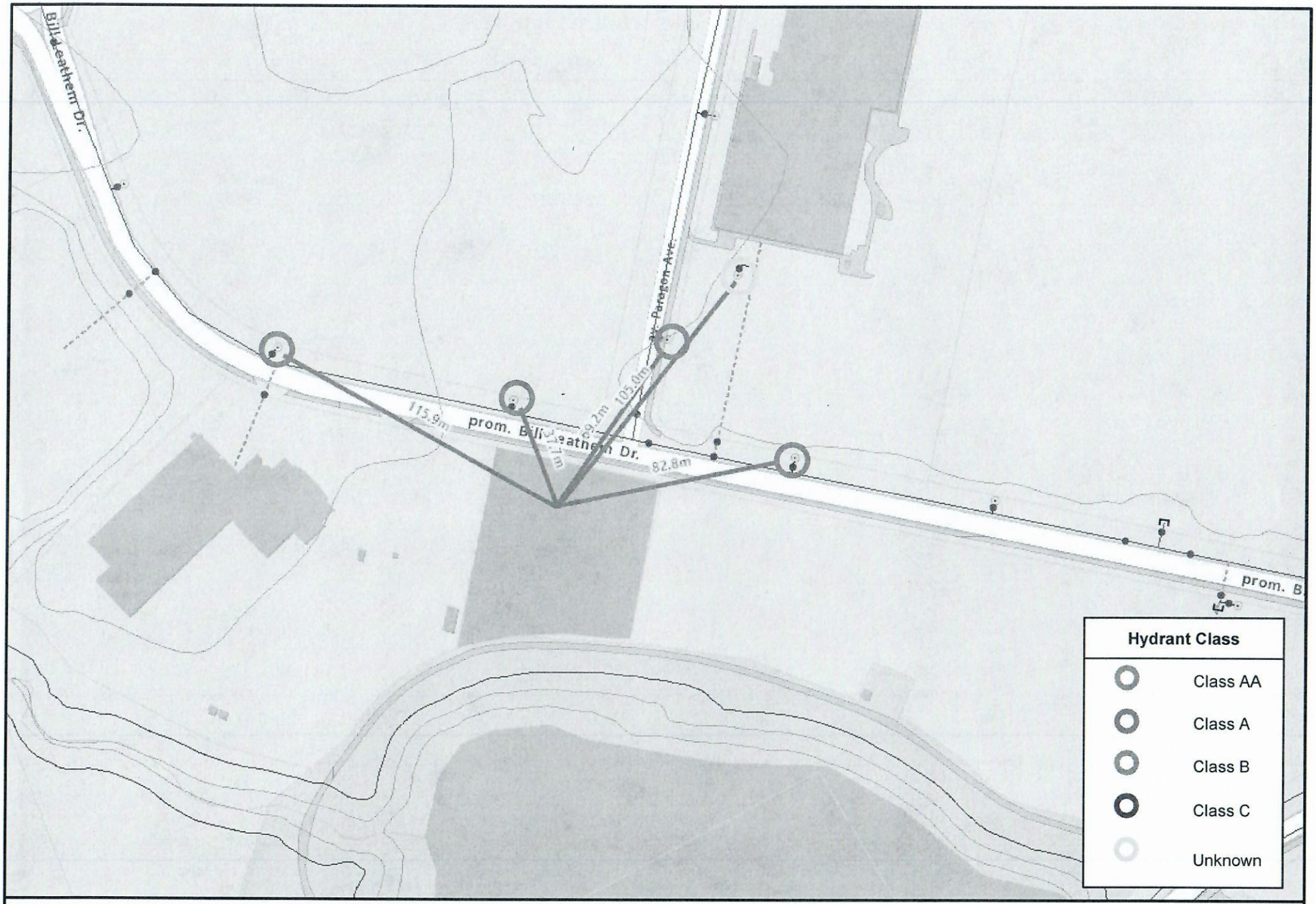


Figure 3: Hydrant Spacing

Source: geoOttawa 2023; *Contains information licensed under the Open Government Licence – City of Ottawa.*

PROPOSED

TWO STOREY COMMERCIAL WAREHOUSE AND OFFICE

BUILDING SITE

PART OF LOT 18

CONCESSION 1 (RIDEAU FRONT)

GEOGRAPHIC TOWNSHIP OF NEPEAN

96 BILL LEATHEM DRIVE

CITY OF OTTAWA

APPENDIX E

CITY OF OTTAWA

SANITARY SEWER DESIGN SHEET

SHEET No. 1 OF 1

SANITARY SEWER DESIGN SHEET

q = average daily per capita flow (__L/cap. d)
I = unit of peak extraneous flow (__L/ha. s)
M = peaking factor = 1.5
Q (p) = peak COMMERCIAL flow (L/s)
Q (i) = peak extraneous flow (L/s)
Q (d) = peak design flow

COMMERCIAL
- COMMERCIAL AVG. FLOW = 50,000 L/ha/D
- P.F. = 1.5
- INFILT^N RATE = 0.33 L/s/ha

$M = 1 + \frac{14}{4 + \sqrt{P}}$ where P population in 1000's

$Q(p) = \frac{PqM}{86.4}$ (L/s)

Q(i) = IA (L/s) where A = area in hectares

Q(d) = Q(p) + Q(i) (L/s)

LOCATION			INDIVIDUAL		CUMULATIVE		Peaking factor M	Pop. flow Q(p) (L/s)	Peak extraneous flow Q(i) (L/s)	Peak design flow Q(d) (L/s)	PROPOSED SEWER						
STREET	FROM	TO	Pop.	Area A (hectares)	Pop.	Area A (hectares)					Length (m)	Pipe size (mm)	Type of pipe	Grade %	Capacity (L/s) n=0.013	Full flow velocity (m/s)	Actual velocity at Q(d)
				A=		0.4047											
96 BILL LEATHEM DRIVE	BLDG.	EX. 250ø SANITARY SEWER MAIN		Q_c =		0.2342 X	1.5	0.35	0.14	0.49	±280	150	PVC	1% (min.)	15.23	0.86	

LICENSED PROFESSIONAL ENGINEER
10/25/23
TONY L.M. MAK
PROVINCE OF ONTARIO

(REF. FILE # 822-125)

DESIGN	TLM
CHECKED	TLM
DATE	OCT. 2023

PROJECT 96 BILL LEATHEM DRIVE
PROPOSED TWO STOREY WAREHOUSE/OFFICE BUILDING SITE - OTTAWA

SHEET No. 1 of 1

PROPOSED

TWO STOREY COMMERCIAL WAREHOUSE AND OFFICE

BUILDING SITE

PART OF LOT 18

CONCESSION 1 (RIDEAU FRONT)

GEOGRAPHIC TOWNSHIP OF NEPEAN

96 BILL LEATHEM DRIVE

CITY OF OTTAWA

APPENDIX F

CITY OF OTTAWA AND MECP

CORRESPONDENCES REGARDING

ECA EXEMPTION

TL MaK

From: Cassidy, Tyler [tyler.cassidy@ottawa.ca]
Sent: March 31, 2023 3:16 PM
To: 'John Mazzarello'; tlmakecl@bellnet.ca
Subject: FW: Industrial Sewage Works ECA Exemption Request - 96 Bill Leathem Drive

Hi John & Tony,

Please find correspondence with the MECP below regarding the industrial sewage works ECA exemption request for 96 Bill Leathem. Based on the information provided to the MECP, they are in concurrence that this application does not meet the definition of industrial works and can be exempt from an ECA application based on O.Reg. 525/98 criteria.

Note that if the use changes to something that would trigger the need for an industrial sewage works ECA, The Owner is responsible to ensure all provincial approvals and permits are up to date.

Please include this email correspondence with your Site Servicing Report appendices when you come in with a formal submission package for this application.

Thank you,

Tyler Cassidy, P.Eng
Infrastructure Project Manager,
Planning, Real Estate and Economic Development Department / Direction générale de la planification, des biens immobiliers et du développement économique - South Branch
City of Ottawa | Ville d'Ottawa
110 Laurier Avenue West Ottawa, ON | 110, avenue. Laurier Ouest. Ottawa (Ontario) K1P 1J1
613.580.2424 ext./poste 12977, Tyler.Cassidy@ottawa.ca

From: Ahmed, Aziz (MECP) <Aziz.Ahmed@ontario.ca>
Sent: March 31, 2023 7:20 AM
To: Warnock, Charles <Charles.Warnock@ottawa.ca>
Cc: Primeau, Charlie <Charlie.Primeau@ontario.ca>
Subject: RE: Industrial Sewage Works ECA Exemption Request - 96 Bill Leathem Drive

Hello Charles,

Happy Friday. We agree that the proposed use as dental/physio mixed office etc. is not industrial, and you may proceed accordingly.

Best,

Aziz

Aziz S. Ahmed, P.Eng. | Manager
Municipal Water and Wastewater Permissions Section, Environmental Permissions Branch | Environmental Assessment and Permissions Division
Ministry of the Environment, Conservation and Parks | 40 St. Clair Ave. West, 2nd Floor, Toronto, ON M4V 1M2

Tel: 416.314.4625 | Cell: 416.712.7427 | Toll Free: 1-888-999-1305 | Fax: 416.314.1037 ✉: Aziz.Ahmed@ontario.ca

If you have any accommodation needs or require communication supports or alternate formats, please let me know.
Si vous avez des besoins en matière d'adaptation, ou si vous nécessitez des aides à la communication ou des médias substituts, veuillez me le faire savoir.

From: Warnock, Charles <Charles.Warnock@ottawa.ca>
Sent: March-27-23 11:50 AM
To: Ahmed, Aziz (MECP) <Aziz.Ahmed@ontario.ca>
Subject: Industrial Sewage Works ECA Exemption Request - 96 Bill Leathem Drive

Hi A ziz,

We have a request for an exemption from an Industrial Sewage Works ECA. The proposed use meets the definition of Industrial as defined in O.Reg. 525/98. If the application is not exempt, we would like to apply through the City of Ottawa Transfer of Review Program.

The consultant states the following:

"We believe our development at 96 Bill Leathem should be processed under the transfer of review program as the effluent generated by our site would not be classified as industrial. This site will operate as a light industrial/mixed use development utilized for the storage and transfer of non hazardous goods .The effluent will not contain any harsh chemicals or toxins that are attributed to heavy industrial processing facilities. Therefore this development should not be categorized as an industrial use and should be reviewed under schedule A ,Article 4 of the City's Transfer of Review Program ."

The site is located at 96 Bill Leathem Drive, Ottawa. The zoning is Light Industrial [IL9] and the Company is Chello Building Corp.
The proposed site use is for warehousing, office, mixed-use space (like dental/physio, health & fitness, etc. – tenants are not yet determined).
The exterior of the site will be used for staff/client parking. There will be no outdoor storage of goods/materials, no storage tanks, and no refueling occurring on site.

If the MECP agrees that this project is not defined as Industrial use, then this project would meet the exemption criteria of O.Reg. 525/98 as the stormwater management works are for a designed for and located on a single parcel of land and is out letting to an existing storm sewer on Bill Leathem Drive (750 mm dia. Conc. Storm sewer on Bill Leathem Drive).

Please let me know if and Industrial ECA is required. If an Industrial ECA is required can the City proceed under the ToR.

Thank you,
Charles Warnock

'

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This e-mail originates from the City of Ottawa e-mail system. Any distribution, use or copying of this e-mail or the information it contains by other than the intended recipient(s) is unauthorized. Thank you.

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PROPOSED

TWO STOREY COMMERCIAL WAREHOUSE AND OFFICE

BUILDING SITE

PART OF LOT 18

CONCESSION 1 (RIDEAU FRONT)

GEOGRAPHIC TOWNSHIP OF NEPEAN

96 BILL LEATHEM DRIVE

CITY OF OTTAWA

APPENDIX G

DEVELOPMENT SERVICING STUDY CHECKLIST SUMMARY

Servicing study guidelines for development applications

4. Development Servicing Study Checklist

The following section describes the checklist of the required content of servicing studies. It is expected that the proponent will address each one of the following items for the study to be deemed complete and ready for review by City of Ottawa Infrastructure Approvals staff.

The level of required detail in the Servicing Study will increase depending on the type of application. For example, for Official Plan amendments and re-zoning applications, the main issues will be to determine the capacity requirements for the proposed change in land use and confirm this against the existing capacity constraint, and to define the solutions, phasing of works and the financing of works to address the capacity constraint. For subdivisions and site plans, the above will be required with additional detailed information supporting the servicing within the development boundary.

4.1 General Content

- ☐ Executive Summary (for larger reports only).
- ☒ Date and revision number of the report.
- ☒ Location map and plan showing municipal address, boundary, and layout of proposed development.
- ☒ Plan showing the site and location of all existing services.
- ☐ Development statistics, land use, density, adherence to zoning and official plan, and reference to applicable subwatershed and watershed plans that provide context to which individual developments must adhere.
- ☐ Summary of Pre-consultation Meetings with City and other approval agencies.
- ☐ Reference and confirm conformance to higher level studies and reports (Master Servicing Studies, Environmental Assessments, Community Design Plans), or in the case where it is not in conformance, the proponent must provide justification and develop a defendable design criteria.
- ☒ Statement of objectives and servicing criteria.
- ☒ Identification of existing and proposed infrastructure available in the immediate area.
- ☐ Identification of Environmentally Significant Areas, watercourses and Municipal Drains potentially impacted by the proposed development (Reference can be made to the Natural Heritage Studies, if available).
- ☐ Concept level master grading plan to confirm existing and proposed grades in the development. This is required to confirm the feasibility of proposed stormwater management and drainage, soil removal and fill constraints, and potential impacts to neighbouring properties. This is also required to confirm that the proposed grading will not impede existing major system flow paths.
- ☐ Identification of potential impacts of proposed piped services on private services (such as wells and septic fields on adjacent lands) and mitigation required to address potential impacts.
- ☐ Proposed phasing of the development, if applicable.

☒ Reference to geotechnical studies and recommendations concerning servicing.

☒ All preliminary and formal site plan submissions should have the following information:
- Metric scale
- North arrow (including construction North)
- Key plan
- Name and contact information of applicant and property owner
- Property limits including bearings and dimensions
- Existing and proposed structures and parking areas
- Easements, road widening and rights-of-way
- Adjacent street names

4.2 Development Servicing Report: Water

☐ Confirm consistency with Master Servicing Study, if available
☒ Availability of public infrastructure to service proposed development
☒ Identification of system constraints
☒ Identify boundary conditions
☒ Confirmation of adequate domestic supply and pressure
☒ Confirmation of adequate fire flow protection and confirmation that fire flow is calculated as per the Fire Underwriter's Survey. Output should show available fire flow at locations throughout the development.
☒ Provide a check of high pressures. If pressure is found to be high, an assessment is required to confirm the application of pressure reducing valves.
☐ Definition of phasing constraints. Hydraulic modeling is required to confirm servicing for all defined phases of the project including the ultimate design
☐ Address reliability requirements such as appropriate location of shut-off valves
☒ Check on the necessity of a pressure zone boundary modification.
☒ Reference to water supply analysis to show that major infrastructure is capable of delivering sufficient water for the proposed land use. This includes data that shows that the expected demands under average day, peak hour and fire flow conditions provide water within the required pressure range

- ☒ Description of the proposed water distribution network, including locations of proposed connections to the existing system, provisions for necessary looping, and appurtenances (valves, pressure reducing valves, valve chambers, and fire hydrants) including special metering provisions.
- ☐ Description of off-site required feedermains, booster pumping stations, and other water infrastructure that will be ultimately required to service proposed development, including financing, interim facilities, and timing of implementation.
- ☒ Confirmation that water demands are calculated based on the City of Ottawa Design Guidelines.
- ☒ Provision of a model schematic showing the boundary conditions locations, streets, parcels, and building locations for reference.

4.3 Development Servicing Report: Wastewater

- ☒ Summary of proposed design criteria (Note: Wet-weather flow criteria should not deviate from the City of Ottawa Sewer Design Guidelines. Monitored flow data from relatively new infrastructure cannot be used to justify capacity requirements for proposed infrastructure).
- ☐ Confirm consistency with Master Servicing Study and/or justifications for deviations.
- ☐ Consideration of local conditions that may contribute to extraneous flows that are higher than the recommended flows in the guidelines. This includes groundwater and soil conditions, and age and condition of sewers.
- ☒ Description of existing sanitary sewer available for discharge of wastewater from proposed development.
- ☐ Verify available capacity in downstream sanitary sewer and/or identification of upgrades necessary to service the proposed development. (Reference can be made to previously completed Master Servicing Study if applicable)
- ☒ Calculations related to dry-weather and wet-weather flow rates from the development in standard MOE sanitary sewer design table (Appendix 'C') format.
- ☐ Description of proposed sewer network including sewers, pumping stations, and forcemains.
- ☐ Discussion of previously identified environmental constraints and impact on servicing (environmental constraints are related to limitations imposed on the development in order to preserve the physical condition of watercourses, vegetation, soil cover, as well as protecting against water quantity and quality).
- ☐ Pumping stations: impacts of proposed development on existing pumping stations or requirements for new pumping station to service development.
- ☐ Forcemain capacity in terms of operational redundancy, surge pressure and maximum flow velocity.
- ☐ Identification and implementation of the emergency overflow from sanitary pumping stations in relation to the hydraulic grade line to protect against basement flooding.
- ☐ Special considerations such as contamination, corrosive environment etc.

4.4 Development Servicing Report: Stormwater Checklist

- ☒ Description of drainage outlets and downstream constraints including legality of outlets (i.e. municipal drain, right-of-way, watercourse, or private property)
- ☐ Analysis of available capacity in existing public infrastructure.
- ☒ A drawing showing the subject lands, its surroundings, the receiving watercourse, existing drainage patterns, and proposed drainage pattern.
- ☒ Water quantity control objective (e.g. controlling post-development peak flows to pre-development level for storm events ranging from the 2 or 5 year event (dependent on the receiving sewer design) to 100 year return period); if other objectives are being applied, a rationale must be included with reference to hydrologic analyses of the potentially affected subwatersheds, taking into account long-term cumulative effects.
- ☐ Water Quality control objective (basic, normal or enhanced level of protection based on the sensitivities of the receiving watercourse) and storage requirements.
- ☒ Description of the stormwater management concept with facility locations and descriptions with references and supporting information.
- ☐ Set-back from private sewage disposal systems.
- ☐ Watercourse and hazard lands setbacks.
- ☐ Record of pre-consultation with the Ontario Ministry of Environment and the Conservation Authority that has jurisdiction on the affected watershed.
- ☐ Confirm consistency with sub-watershed and Master Servicing Study, if applicable study exists.
- ☒ Storage requirements (complete with calculations) and conveyance capacity for minor events (1:5 year return period) and major events (1:100 year return period).
- ☐ Identification of watercourses within the proposed development and how watercourses will be protected, or, if necessary, altered by the proposed development with applicable approvals.
- ☒ Calculate pre and post development peak flow rates including a description of existing site conditions and proposed impervious areas and drainage catchments in comparison to existing conditions.
- ☐ Any proposed diversion of drainage catchment areas from one outlet to another.
- ☒ Proposed minor and major systems including locations and sizes of stormwater trunk sewers, and stormwater management facilities.
- ☐ If quantity control is not proposed, demonstration that downstream system has adequate capacity for the post-development flows up to and including the 100 year return period storm event.
- ☐ Identification of potential impacts to receiving watercourses
- ☐ Identification of municipal drains and related approval requirements.
- ☒ Descriptions of how the conveyance and storage capacity will be achieved for the development.
- ☒ 100 year flood levels and major flow routing to protect proposed development from flooding for establishing minimum building elevations (MBE) and overall grading.

- ☐ Inclusion of hydraulic analysis including hydraulic grade line elevations.
- ☒ Description of approach to erosion and sediment control during construction for the protection of receiving watercourse or drainage corridors.
- ☐ Identification of floodplains – proponent to obtain relevant floodplain information from the appropriate Conservation Authority. The proponent may be required to delineate floodplain elevations to the satisfaction of the Conservation Authority if such information is not available or if information does not match current conditions.
- ☐ Identification of fill constraints related to floodplain and geotechnical investigation.

4.5 Approval and Permit Requirements: Checklist

The Servicing Study shall provide a list of applicable permits and regulatory approvals necessary for the proposed development as well as the relevant issues affecting each approval. The approval and permitting shall include but not be limited to the following:

- ☐ Conservation Authority as the designated approval agency for modification of floodplain, potential impact on fish habitat, proposed works in or adjacent to a watercourse, cut/fill permits and Approval under Lakes and Rivers Improvement Act. The Conservation Authority is not the approval authority for the Lakes and Rivers Improvement Act. Where there are Conservation Authority regulations in place, approval under the Lakes and Rivers Improvement Act is not required, except in cases of dams as defined in the Act.
- ☐ Application for Certificate of Approval (CofA) under the Ontario Water Resources Act.
- ☐ Changes to Municipal Drains.
- ☐ Other permits (National Capital Commission, Parks Canada, Public Works and Government Services Canada, Ministry of Transportation etc.)

4.6 Conclusion Checklist

- ☒ Clearly stated conclusions and recommendations
- ☐ Comments received from review agencies including the City of Ottawa and information on how the comments were addressed. Final sign-off from the responsible reviewing agency.
- ☒ All draft and final reports shall be signed and stamped by a professional Engineer registered in Ontario